# TG-K777ES

# SERVICE MANUAL

AEP Model



'Dolby' and the double-D symbol are the trade marks of Dolby laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

SPECIFICATIONS

Tape Transport Mechanism Type

TCM-120D4

Recording system 4-track 2-channel stereo

105 kHz Bias frequency

Signal-to-noise ratio (NAB, at peak level)

Dolby NR switch Cassette	OFF	B-TYPE ON	C-TYPE ON
TYPE IV (Sony METAL-ES)	61 dB	68 dB	74 dB
TYPE II (Sony UCX-S)	59 dB	66 dB	72 dB
TYPE I (Sony HF-S)	57 dB	64 dB	70 dB

Total harmonic distortion

0.7% (with Sony METAL-ES cassettes)

Frequency response

DOLBY NR OFF

With TYPE IV cassette (Sony METAL-ES)

10-20,000 Hz

15-19,000 Hz (±3 dB)

15-14,000 Hz (±3 dB, 0 VU recording)

15-19,000 Hz (DIN)

With TYPE II cassette (Sony UCX-S)

10-20,000 Hz

15-18,000 Hz (±3 dB)

15-18,000 Hz (DIN)

With TYPE I cassette (Sony HF-S)-

10-19,000 Hz

15-17,000 Hz (DIN)

Wow and flutter

0.02% WRMS (NAB)

± 0.055% (DIN)

Inputs

Line inputs (phono jacks) Sensitivity 77.5 mV

Input impedance 47 k ohms

Outputs

Fixed line outputs (phono jacks)

Output level 0.44 V at a load impedance of

47 k ohms

Load impedance over 10 k ohms

Variable line outputs (phono jacks) Maximum output level 0.44 V at a load

impedance of 47 k ohms with LINE OUT level

control at "MAX"

Variable from 0.44 V to 0V

Load impedance over 10 k ohms

Headphone output

Output level variable from 1.6 mW to 0 mW at

a load impedance of 32 ohms

- Continued on page 2 -

#### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK M ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.



STEREO CASSETTE DECK SONY

## TC-K777ESII

General

Power requirements

220 V ac, 50/60 Hz

Power consumption

38 watts

Dimensions

Approx. 430 × 110 × 390 mm (w/h/d)

 $(16^7/_8\times 4^3/_8\times 15^3/_8 \ inches)$  including projecting parts and controls

Weight

Approx. 10.8 kg (23 lbs 13 oz)

LED peak program meters

Response range - 40 dB to + 10 dB

Frequency response

20-20,000 Hz ± 1.5 dB

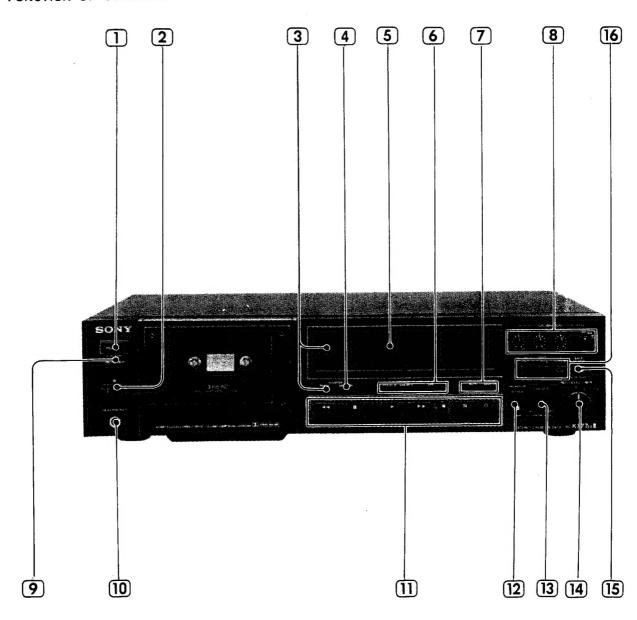
Response time 1 millisecond Decay time (from 0 dB to -20 dB)

750 milliseconds

Overshoot none

Indicator elements 30 elements for each channel

#### **FUNCTION OF CONTROLS**



#### 1 POWER switch

Depress this switch to turn on the power. The lamp in the cassette holder, the display of the peak program meters and the tape counter will light up. The II indicator lamp of the PAUSE button will blink for about 3 seconds, indicating that the function buttons are inoperative during this period. Press this switch again to turn the power off.

#### 

Press this button to open the cassette holder.

#### 3 Tape counter and COUNTER RESET button

The tape counter shows the tape running time. Press the COUNTER RESET button to reset the tape counter to "00."

#### **4** MEMORY button

Press to rewind the tape to the "00" point on the tape counter. The word "MEMORY" is displayed below the tape counter. Pressing the ▶ button together with the ◄◀ button automatically starts playback from ":00."
When you do not use the memory function, press this switch again. The word "MEMORY" will disappear.

#### 5 Multi-purpose display monitor

When the CALIBRATION MODE switch is at the OFF position, the peak program meter scale is displayed. The meter shows the recording level of each channel with the MONITOR switch set at SOURCE and the recorded levels with the MONITOR switch set at TAPE. When the CALIBRATION MODE switch is set to BIAS, the display changes to the scale used for bias calibration and when the switch is set to REC LEVEL, the display changes to the scale for record level calibration.

#### **6** NOISE REDUCTION switches and indicators

To record or play back using the Dolby\* B-type NR system, press the DOLBY B switch. To record or play back using the Dolby C-type NR system, press the DOLBY C switch. The corresponding indicator lights up.

To record or play back without the Dolby NR process, press the OFF switch.

For details about the Dolby NR system, see page 16.

\* "Dolby" and the double-D symbol are trade marks of the Dolby Laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing

#### 7 PEAK HOLD RESET buttons

You can choose either of two ways to have the peak level indicated:

- When the AUTO button is pressed down, successive peaks are held for about 2.5 seconds, except when a higher peak occurs before 2.5 seconds have passed, in which case that peak is immediately indicated.
- When the non-locking MANUAL button is pressed, the peak level will be held on the scale until a higher peak occurs, when that peak will be held. To reset the peak held on the meter, just press this button. You will find this method of indicating the peak input useful when you want to know the highest peak of a tape or disc, or when you want to know both the highest peak as well as the intermittent input levels during live recording.

#### **8 CALIBRATION section**

These dials are used for the bias and recording level calibration.

#### 9 TIMER switch

You can set the unit to record or play back at a predetermined time by connecting any commercially available timer. To record, set this switch to REC. To playback, set it to PLAY.

#### 10 HEADPHONES jack

Headphones may be inserted either to monitor the input signals to be recorded or to listen to a recording in the playback mode.

Headphone volume is adjustable with the LINE OUT/ PHONE LEVEL control.

#### 11) Function buttons

It is possible to switch directly from one mode to another.

- ◄ (rewind) button: Press this button to rewind the tape. This button is also used, with the ▶ button, to initiate auto play.
- ► (forward) button: Press this button to play the tape back. To record, press this button while holding the ● button down.
- (fast-forward) button: Press this button to advance the tape rapidly.
- (record) button: Press this button together with the button to start recording. Also press this button before adjusting the recording level.
- (stop) button: To stop the tape, press this button. The tape will stop automatically when it is completely wound in either direction.
- PAUSE button: To pause for a moment during recording or playback, press this button. This button is also used to control more precisely the start of recording and to release the record muting mode.

O REC MUTE (record muting) button: Press this button to eliminate unwanted material and to insert a blank space during recording.

#### 12 MONITOR switch

When adjusting the recording level, set this switch to SOURCE to allow monitoring of the sound to be recorded. During playback, set this switch to TAPE to allow monitoring of the recorded sound. During recording, use this switch to monitor either the source or the recorded sound.

#### 13 LINE OUT/PHONE LEVEL control

This control governs the output level of the VARIABLE LINE OUT jacks as well as the headphone level.

The output level is reduced as it is turned to the left.

These settings do not affect the peak program meters or the output level of the FIXED LINE OUT jacks.

#### 14 REC LEVEL (recording level) controls

These controls adjust the recording level. The outer knob is for the left channel and the inner knob for the right channel. To adjust the level of the left or right channel only, turn the appropriate knob while holding the other knob.

#### 15 MPX FILTER switch

Normally set this switch to OFF.

When recording FM stereo broadcasts with the Dolby NR system, set it to ON if the 19 kHz pilot signal and the 38 kHz subcarrier have not been adequately suppressed by the FM tuner or receiver. The word "FILTER" will be displayed on the monitor.

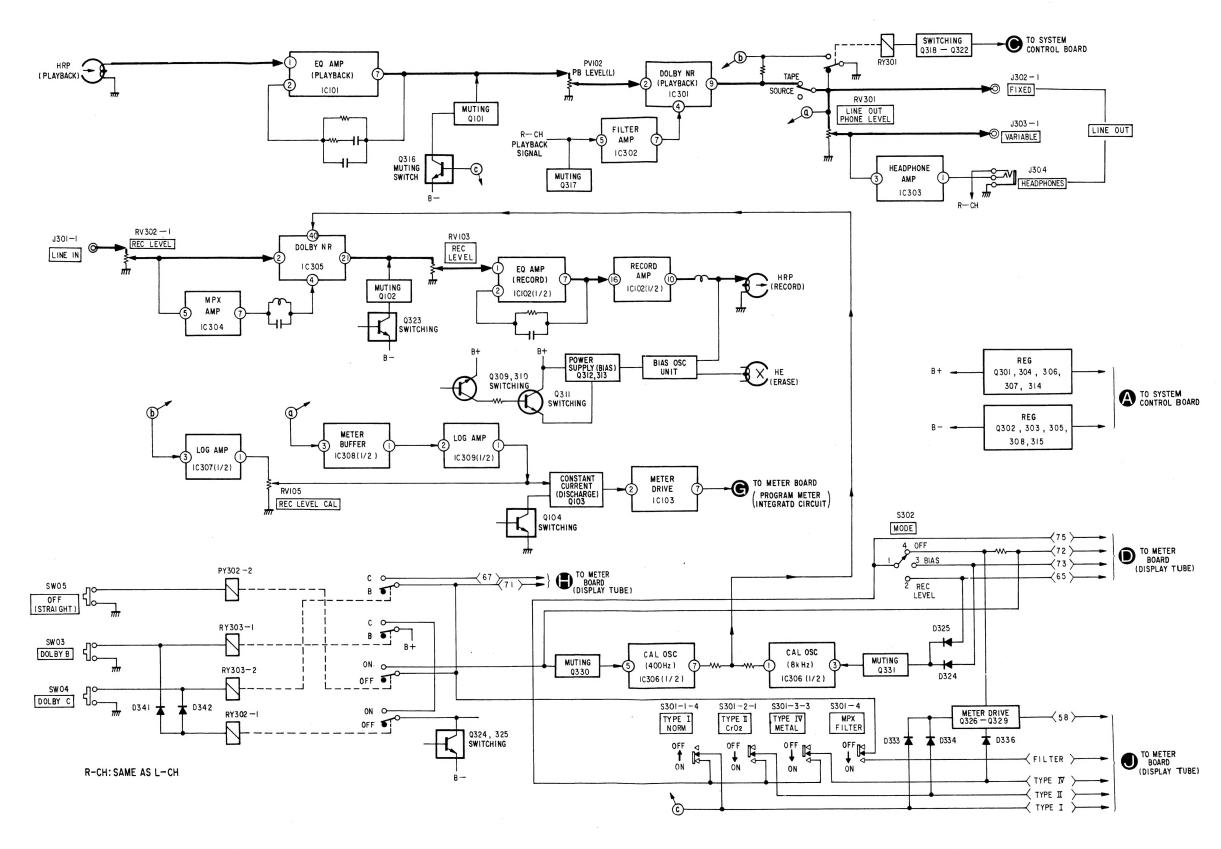
If the tuner or the receiver suppresses such signals adequately (most high-quality tuners and receivers will), you do not have to set this switch to ON.

#### (16) TAPE select buttons

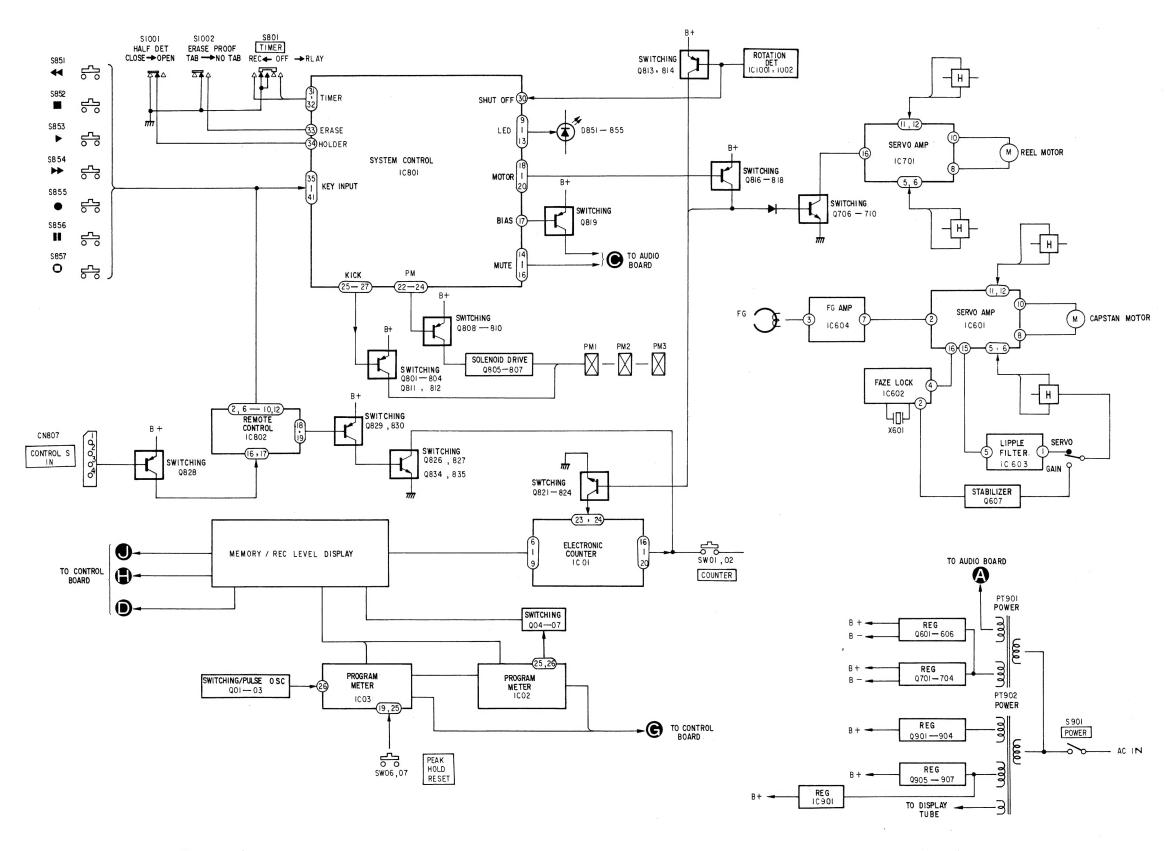
Depress the TAPE button corresponding to the type of tape being used. The type of tape will be displayed on the display monitor.

# SECTION 1 BLOCK DIAGRAM

#### 1-1. AUDIO/CONTROL BLOCK



#### 1-2. SYSTEM CONTROL/SERVO BLOCK



# SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

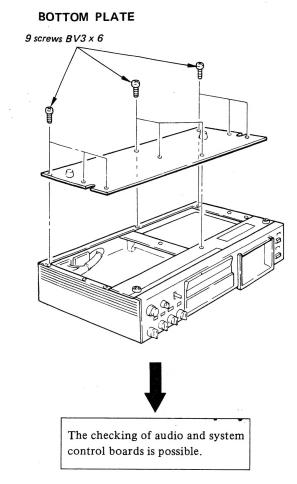
COVER

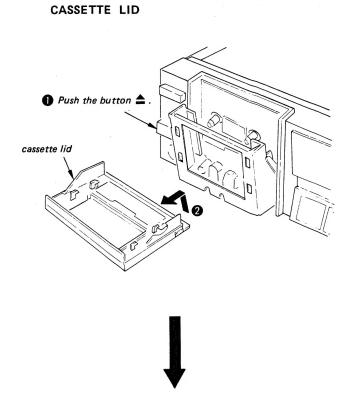
SERVO BOARD

Servo board

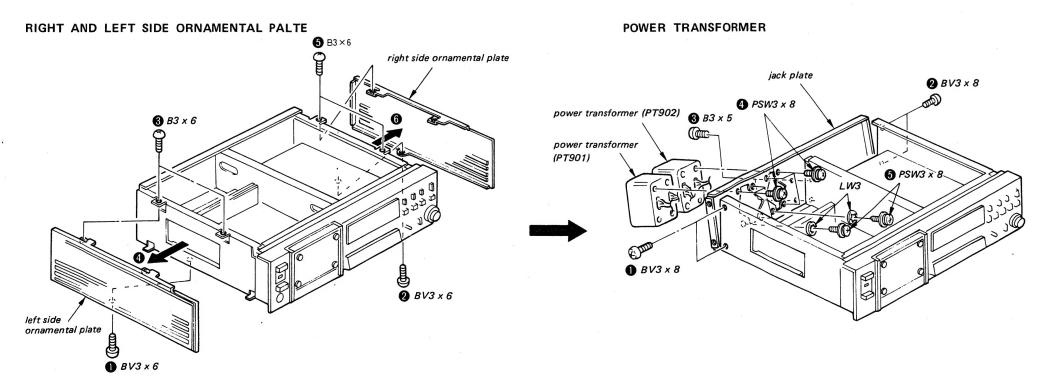
PSW3 x 6

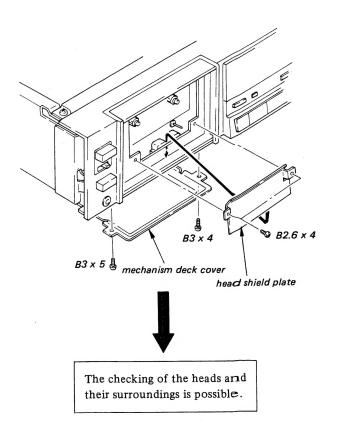
PSW3 x 6

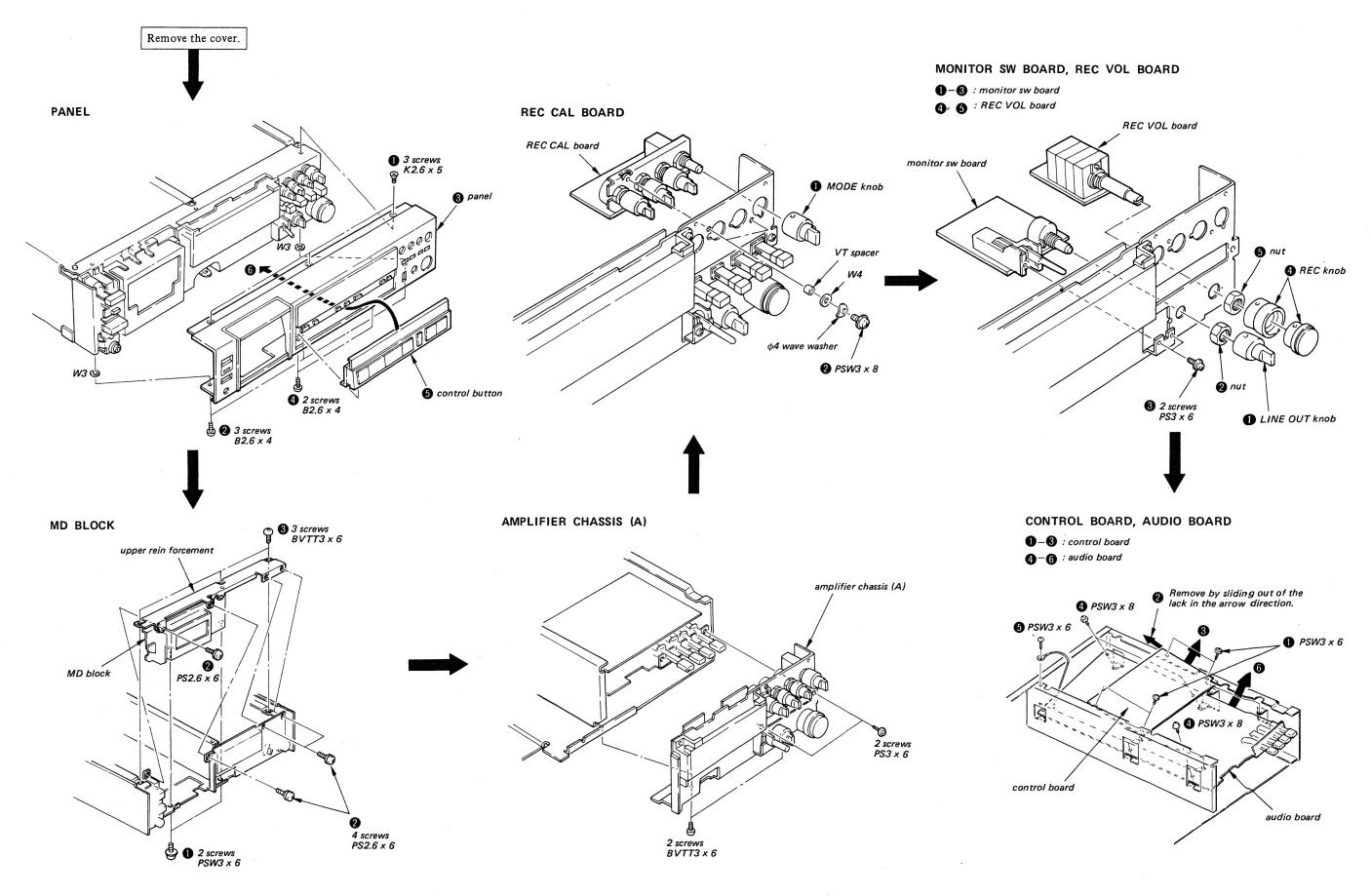


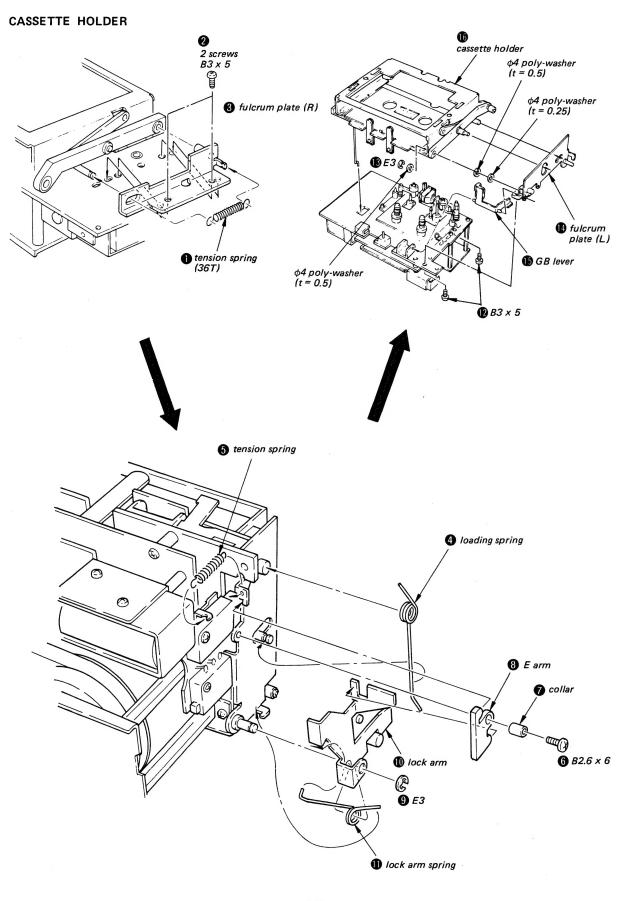






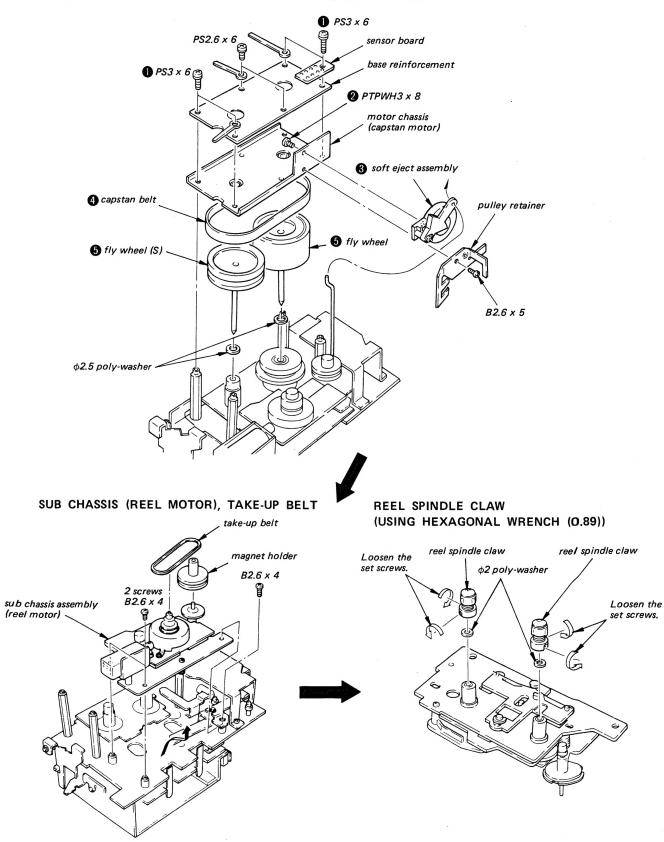




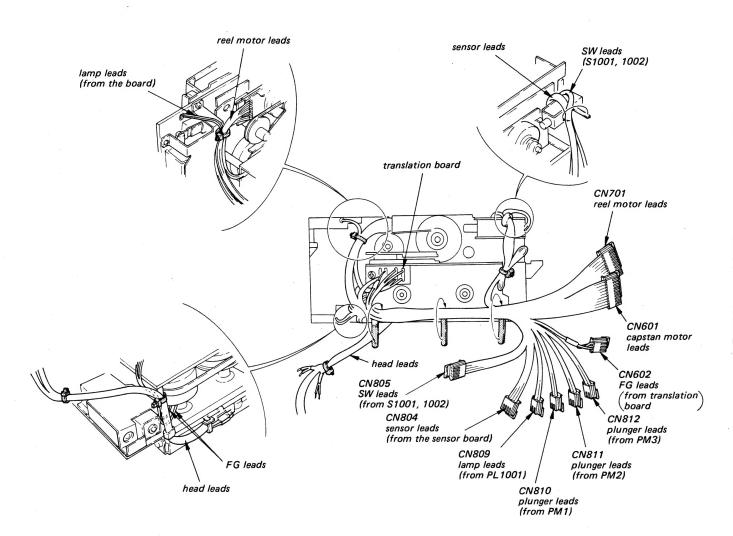


• MECHANISM BLOCK REMOVAL

MOTOR CHASSIS ASSEMBLY (CAPSTAN MOTOR), CAPSTAN BELT

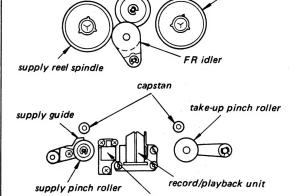


#### MECHANISM BLOCK WIRING REFERENCE



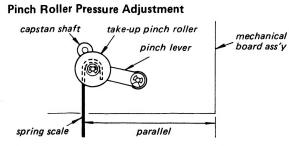
#### 3-1. MECHANICAL ADJUSTMENTS

# Precaution 1. Clean the following parts with a denatured alcohol-moistened swab. reel motor limiter take-up reel spindle



- 2. Demagnetize the record/playback head with a head demagnetizer.
- 3. Do not use a magnetized screwdriver for the adjustments.

#### AD



- 1. Make sure that the capstan shaft and pinch roller are parallel.
- 2. In forward mode, pull the spring scale slowly so that it is parallel to the surface of the mechanical board ass'y and read the spring scale when the pinch roller starts rotating.

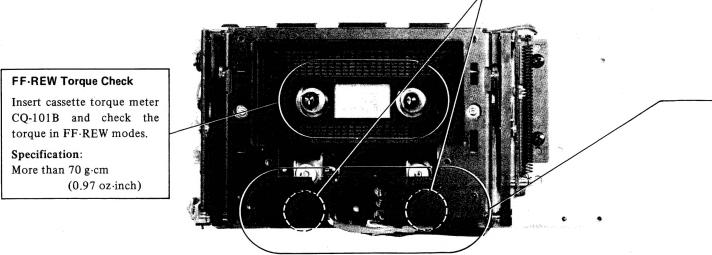
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ad ta: wl

#### Specification

	pinch roller pressure
take-up side	220 - 380 g
supply side	180 - 280 g

3. If necessary, change the position of pinch roller plunger. (Refer to Pinch roller/Head Plunger Position Adjustment on page 18.)

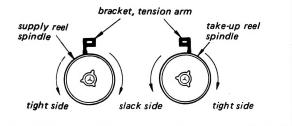


#### **Brake Torque Check**

- 1. Take-up reel brake torque
  Place the torque meter on the take-up reel spindle
  and turn the spindle clockwise. Check that the
  slack torque is within the specification.
- Supply reel brake torque
   Place the torque meter on the supply reel spindle and turn the spindle counterclockwise.
   Check that the slack torque is within the specification

#### Specification

Tight side:  $100 - 200 \text{ g} \cdot \text{cm} (1.4 - 2.8 \text{ oz} \cdot \text{inch})$ Slack side: less than 90 g·cm (1.3 oz·inch)



102)

or leads

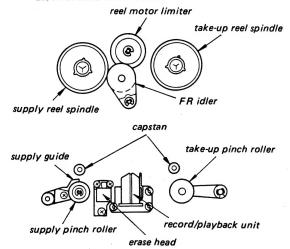
#### TC-K777ESII

### **SECTION 3 ADJUSTMENTS**

#### 3-1. MECHANICAL ADJUSTMENTS

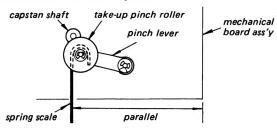
#### Precaution

1. Clean the following parts with a denatured alcohol-moistened swab.



- 2. Demagnetize the record/playback head with a head demagnetizer.
- 3. Do not use a magnetized screwdriver for the adjustments.

Pinch Roller Pressure Adjustment



- 1. Make sure that the capstan shaft and pinch roller are parallel.
- 2. In forward mode, pull the spring scale slowly so that it is parallel to the surface of the mechanical board ass'y and read the spring scale when the pinch roller starts rotating.

#### Specification

	pinch roller pressure
take-up side	$220 - 380 \mathrm{g}$
supply side	180 — 280 g

3. If necessary, change the position of pinch roller plunger. (Refer to Pinch roller/Head Plunger Position Adjustment on page 18.)

CN601 apstan motor eads

1602 ; leads com translation oard 12 ger leads

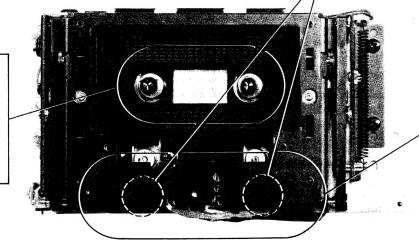
#### FF-REW Torque Check

Insert cassette torque meter CQ-101B and check the torque in FF-REW modes.

#### Specification:

More than 70 g·cm

(0.97 oz·inch)



#### **Brake Torque Check**

1. Take-up reel brake torque

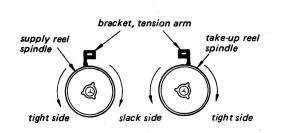
Place the torque meter on the take-up reel spindle and turn the spindle clockwise. Check that the slack torque is within the specification.

2. Supply reel brake torque

Place the torque meter on the supply reel spindle and turn the spindle counterclockwise.

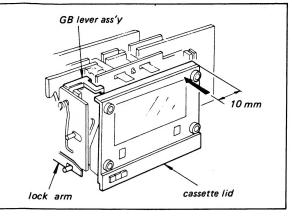
Check that the slack torque is within the specification.

Tight side:  $100 - 200 \text{ g} \cdot \text{cm} (1.4 - 2.8 \text{ oz} \cdot \text{inch})$ Slack side: less than 90 g·cm (1.3 oz·inch)



#### **Cassette Holder Operation**

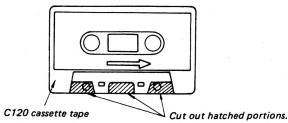
- 1. Insert a cassette tape (C-90 with erasure prevention tab) into the cassette holder and push the portion slowly shown by the arrow. Make sure that the cassette holder is locked, the GB lever ass'y is lowered and the lock arm returns completely.
- 2. Make sure that the cassette holder opens smoothly in 0.6 - 1.5 seconds.



#### **Head Height Adjustment**

Insert a mirror cassette or adjustment cassette and adjust screws  $\mathbf{A} - \mathbf{C}$  so that the tape enters the tape guide of the record/playback head smoothly when pushing the head base out by hand.

1. Make an adjustment cassette as shown below or use a mirror cassette.

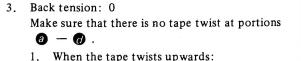


2. Insert the mirror cassette (or adjustment cassette) into the set. In FWD mode, the tape should not curl at the portions shown by arrows (tape guides) in Fig. a.

If it does, adjust the height of tape guide of supply pinch roller.

#### Adjustment locations:

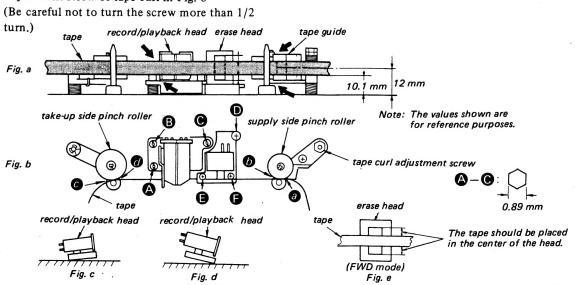
adjustment screw of tape curl in Fig. b



- Turn adjustment screws B, G of the record/playback head and recline the head as shown in Fig. C.
- 2. When the tape twists downwards: Turn adjustment screws B, G and recline the head as shown in Fig. D.
- 4. Measure the height of erase head. If it is out of the range indicated in Fig. e, follow the procedures below.
  - 1. When the height of erase head is out of the range:

Adjust the height by screws **(D)**, **(B)** of the erase head.

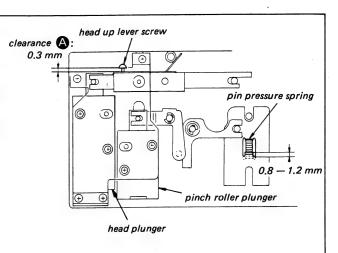
2. After adjusting the height of the erase head, make sure that the head is not inclined. If necessary, loosen or tighten adjustment screw **(D)**.

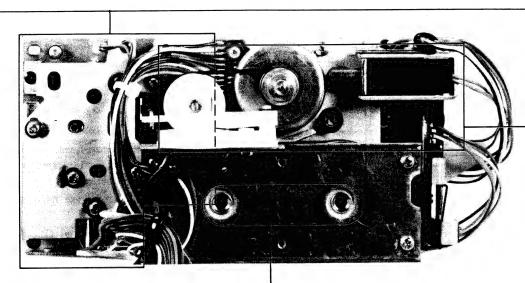


35 - 45 g⋅cm

#### Pinch Roller/Head Plunger Position Adjustment

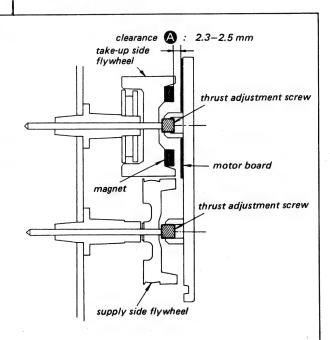
- 1. Position the head plunger so that clearance is 0.3 mm.
- 2. Move the head plunger and the pinch roller plunger and adjust the position of the pinch roller plunger so that the pin pressure spring can move in the range of 0.8 mm 1.2 mm.
- 3. Apply the locking compound to the plunger screw





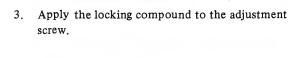
#### Take-up Side/Supply Side Flywheel Thrust Adjustment

- 1. Take-up Side Flywheel
  Insert a spacer of 2.4 mm between the flywheel
  magnet and motor board and adjust the position
  of the magnet so that clearance (A) is between
  2.3 mm and 2.5 mm.
- 2. Supply Side Flywheel Tighten the thrust adjustment screw lightly till the flywheel does not move and then loosen it by 1/2 3/4 turns.
- 3. After the adjustment, apply the locking compound to the adjustment screw.



#### Forward Torque/Back Tension Torque Adjustment

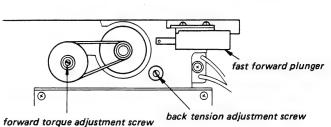
- 1. Loosen adjustment screws of the forward torque and back tension torque till the magnet holder does not move and then turn them by 1/2 turn clockwise.
- 2. Connect the cassette torque meter (CQ-102B) and measure forward torque and back tension. If they do not meet the specifications, adjust the back tension adjustment screw.

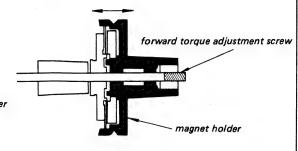


back tension torque 5.5 − 7.5 g·cm

forward torque

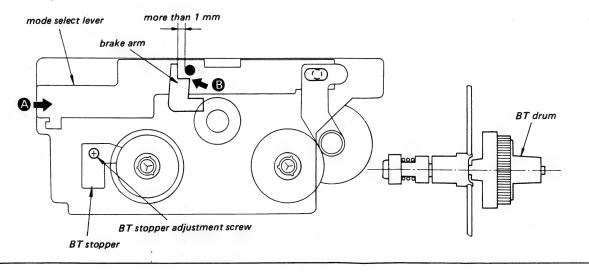
Specifications:





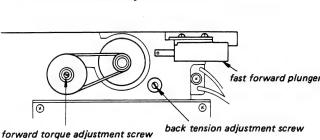
#### Check of BT Stopper Position

- Loosen the BT stopper adjustment screw, push
  the mode select lever in the direction of arrow
  and fix the BT stopper to the reel spindle
  with the adjustment screw.
- 2. Move the brake arm in the direction of arrow **B**, remove the brake from the reel spindle and confirm that the BT drum does not rotate together with the reel spindle.
- 3. Make sure that the clearance between the mode select lever and the brake arm is more than 1 mm when the mode select lever returns to its original position.



#### Forward Torque/Back Tension Torque Adjustment

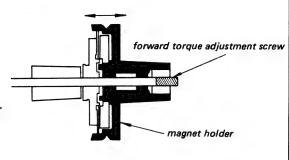
- 1. Loosen adjustment screws of the forward torque and back tension torque till the magnet holder does not move and then turn them by 1/2 turn clockwise.
- 2. Connect the cassette torque meter (CQ-102B) and measure forward torque and back tension. If they do not meet the specifications, adjust the back tension adjustment screw.



Specifications:

forward torque 35-45 g·cm back tension torque 5.5-7.5 g·cm

3. Apply the locking compound to the adjustment screw

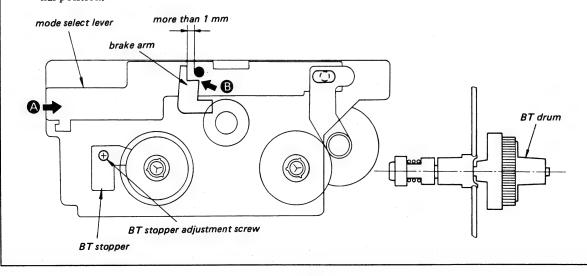


#### Check of BT Stopper Position

g

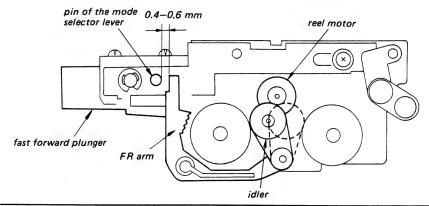
w

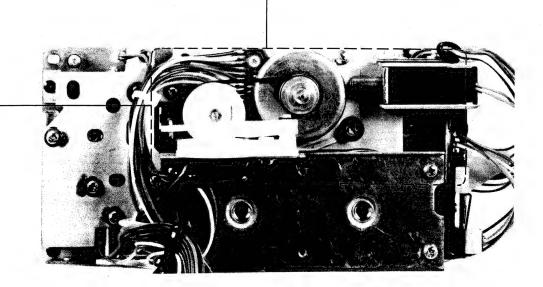
- 1. Loosen the BT stopper adjustment screw, push the mode select lever in the direction of arrow and fix the BT stopper to the reel spindle with the adjustment screw.
- 2. Move the brake arm in the direction of arrow **B**, remove the brake from the reel spindle and confirm that the BT drum does not rotate together with the reel spindle.
- 3. Make sure that the clearance between the mode select lever and the brake arm is more than 1 mm when the mode select lever returns to its original position.



#### Fast Forward Plunger Position Adjustment

- 1. Push the fast forward plunger.
- 2. Turn the reel motor clockwise (fast forward mode). When the idler and the reel spindle come into contact, adjust the position of the fast forward plunger by loosening the screw so that the clearance between the FR arm and the mode selector lever pin is between 0.4 mm and 0.6 mm.
- 3. Next, turn the reel motor counterclockwise (rewind mode) and adjust to obtain the same result as in step 2.
- 4. Apply the locking compound to the plunger screw.





#### 3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

• Set the TAPE switch according to the test tape as follows.

Tape	TAPE Switch
CS-121	TYPE I
CS-210	TYPE II
CS-42	TYPE IV

• Switches and controls should be set as follows unless otherwise specified.

CALIBRATION MODE	
REC LEVEL $(L/R)$	MID
CALIBRATION BIAS	
REC LEVEL	MID
DOLBY NR	OFF
TAPE	TYPE I
LINE OUT	0 dB
MONITOR	SOURCE
TIMER	OFF

#### • Standard Record:

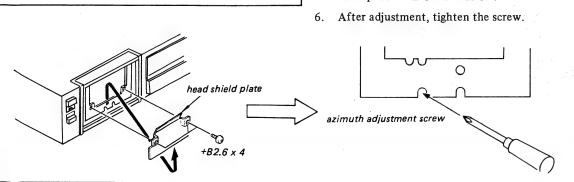
Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

#### Standard Input Level

Input Terminal	LINE IN
source impedance	10 kΩ
input level	0.25 V (-10 dB)

#### Standard Output Level

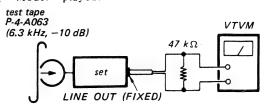
Output Terminal	HEADPHONES	LINE OUT	
load impedance	47 kΩ	8 Ω	
output level	0.44 V (-5 dB)	39 mV (-27 dB)	



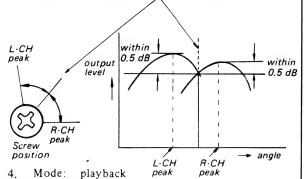
#### Record/Playback Head Azimuth Adjustment

#### Procedure:

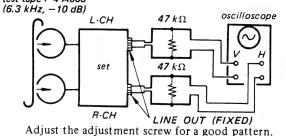
- 1. Loosen the adjustment screw.
- 2. Mode: playback



3. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5 dB.



4. Mode: playback test tape P-4-A063



Screen pattern

in-phase 45° 90° 135° 180°

good wrong

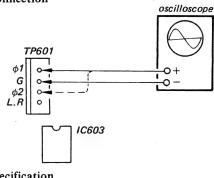
5. Adjust the azimuth adjustment screw for the same phase in L-CH and R-CH.

#### **Capstan Motor Adjustment**

#### Procedure:

- Turn the POWER switch ON. Put into STOP mode.
- 2. Set S601 to gain side fully-counterclockwise and connect oscilloscope to TP601.
- 3. Confirm that oscilloscope point 0 is on the intersection of X-axis and Y-axis.
- 4. Adjust the variable resistor so that the  $\phi 1$ ,  $\phi 2$  resurge waveform is a 7 V diameter circle centered around point 0.

#### • Connection



• Specification

#### Gain (output)

Oscilloscope

Connection

TP601 (φ1)

TP601 ( $\phi$ 2)

Oscilloscope Connection	Variable Resistor	
ΤΡ601 (φ1)	RV603	
TP601 (φ2)	RV604	1
ffset		X-a

φ2 7±0.3 V γ-axis

φ1 7±0.3 V +2 V B A : B = 3 : 7

Adjustment Location: servo board

• Specification

5. Switch S601 to servo side fully-clockwise.

Variable

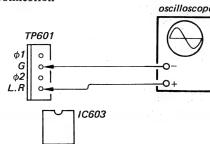
Resistor

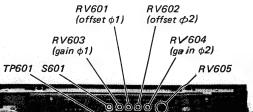
RV601

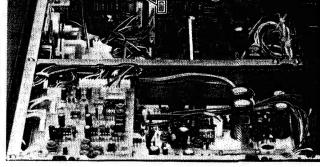
RV602

- 6. Adjust RV605 so that TP601 servo output square wave is between 0 V and 2 V and duty is 3:7.
- 7. After adjustment, set to FWD with cassette inserted and confirm that the TP601 servo output square wave does not change much.

#### Connection



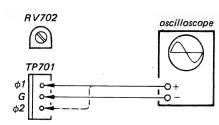




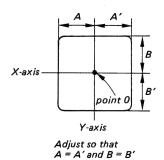
#### Reel Motor Adjustment

#### Procedure:

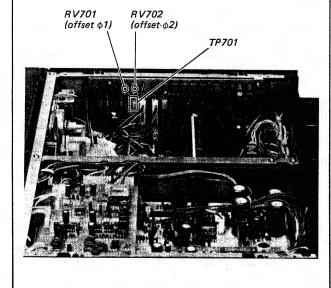
- Confirm that oscilloscope point 0 is on the intersection of X-axis and Y-axis.
- 2. Insert the cassette tape and put into FWD mode.
- 3. Adjust RV701 and RV702 so that the TP701 output waveform is equidistant from point 0 on all sides, as shown below.  $(\phi 1, \phi 2 \text{ offset adjustment.})$
- Connection



#### • Specification



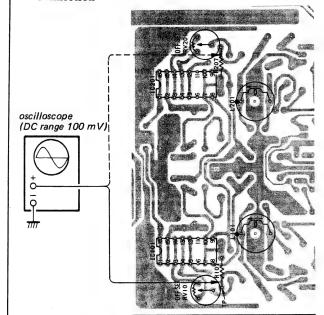
#### Adjustment Location: servo board



#### Playback Offset Adjustment

#### Procedure:

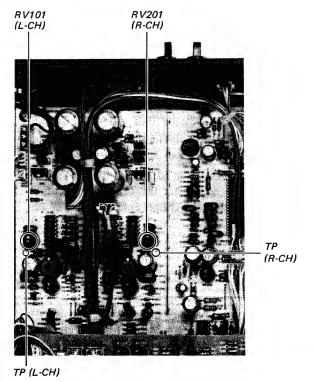
- 1. Adjust RV107 (L-CH) and RV207 (R-CH) so that output level at test point of R107 (L-CH) and R207 (R-CH) is 0 V.
- Connection



Specification

0 V ±100 mV

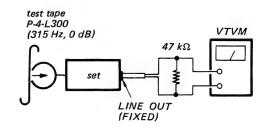
Adjustment Location: audio board



#### Playback Level Adjustment

#### Procedure:

Mode: playback



Adjust RV102 (L-CH) and RV202 (R-CH) to obtain the specified LINE OUT level.

#### Specification:

LINE OUT level: 0.42 to 0.45 V

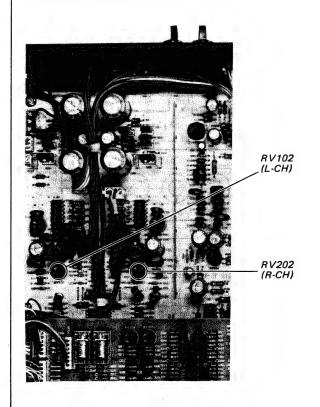
(-5.3 to -4.7 dB)

Level difference between channels:

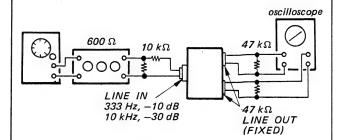
less than 0.5 dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location: audio board



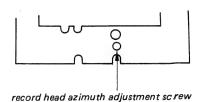
#### **Record Head Azimuth Adjustment**

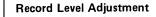


- 1. Apply a 333 Hz, -10 dB signal to LINE IN, and adjust REC VOL so that LINE OUT is -5 dB.
- 2. Loosen CT301-1 and CT301-2 about 1/2-1 rotation from the fully tightened state.
- 3. Apply a 10 kHz, -30 dB signal to LINE IN and simultaneously record and playback.
- 4. Adjust the recording head azimuth adjustment screw so that L-CH and R-CH outputs are maximem and so that phases are equal.

#### Specification:

The level difference at the point where outputs are maximum and phases match must be within 1 dB.





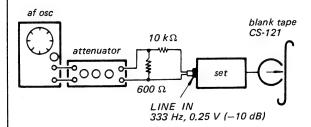
#### Setting:

REC LEVEL control: standard recrod -10 dB 333 Hz LINE IN:

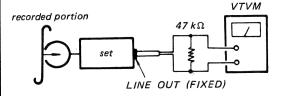
LINE OUT: -5 dB

#### Procedure:

1. Mode: record



2. Mode: playback

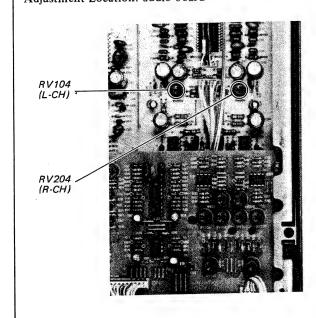


Adjust RV104 (L-CH) and RV204 (R-CH) to obtain -5 dB LINE OUT level.

#### Specification:

LINE OUT level: 0.41 to 0.46 V (-5.5 to -4.5 dB)

Adjustment Location: audio board



#### **Record Bias Adjustment**

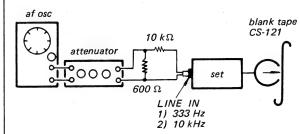
#### Setting:

REC LEVEL control: standard record

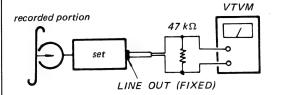
LINE IN: -10 dB LINE OUT: -5 dB

#### Procedure:

1. Mode: record



2. Mode: playback



Adjust CT301-1 (L-CH) and CT301-2 (R-CH) to obtain the same playback level at 333 Hz and 10 kHz.

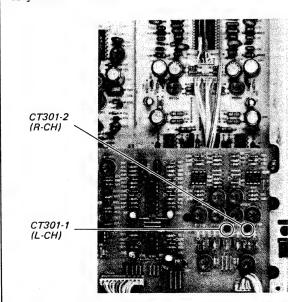
3. Repeat steps 1 and 2. Be sure to finish adjusting CT301-1 and CT301-2 by turning them clockwise.

#### Specification:

-25-

Difference between 333 Hz and 10 kHz: -0.5 to 0.5 dB

Adjustment Location: audio board



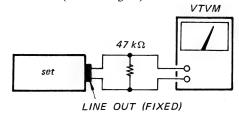
#### Bias Trap and Bias Osc Frequency Adjustments

#### Setting:

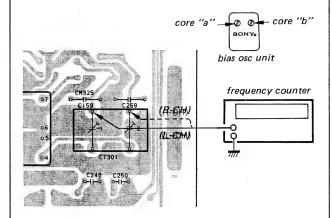
TYPE IV TAPE switch: MONITOR switch: TAPE

#### Procedure:

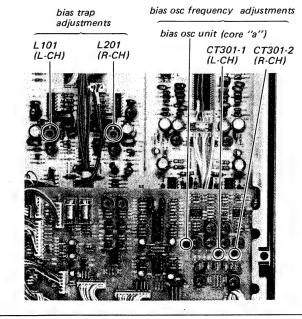
1. Mode: record (with no signal)



- 2. Adjust L101 (L-CH) and L201 (R-CH) so that LINE OUT level is less than 2.75 mV (-49 dB).
- 3. In bias trap adjustment state connect a frequency counter to a trimmer capacitor (CT301-1 or CT301-2) and adjust bias oscillation frequency with bias oscillator core "a".



#### Adjustment Location: audio board



#### **Meter Calibration**

#### Setting:

PEAK HOLD reset switch: MANUAL REC LEVEL control: LINE IN: -10 dB, 1 kHz

LINE OUT: -5 dB

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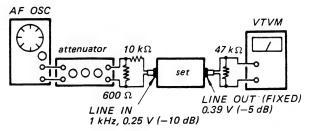
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οι

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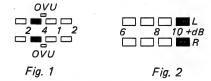
#### Procedure:

1. Mode: record

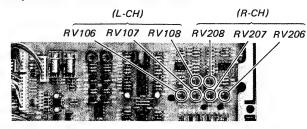


- 2. Apply a 333 Hz, -10 dB to LINE IN and adjust REC VOL so that LINE OUT level is -5 dB.
- 3. Set RV106 and RV206 MIN and adjust RV107 and RV207 so that LOW segment lights up dimly as shown in Fig. 1.
- 4. LOW segment should go out when the input level is set to -10.3 dB.
- 5. Adjust RV106 and RV206 so that LOW segment lights up dimly pushing PEAK HOLD MANUAL switch when the input level is set to -10.3 dB.
- 6. LOW segment should light up completely when the input level is set to -10 dB.
- 7. Set the input level -10 dB and adjust REC VOL so that LINE OUT output is +9 dB. 8. Lower the input 0.3 dB so that LINE OUT output
- is  $+8.7 \, dB$ . While pushing PEAK HOLD MANUAL switch, adjust RV108 and RV208 so that the segment
- 9. Adjust the input level so that LINE OUT output is +9 dB. At this time, the segment in Fig. 2 should light up completely.

lights up dimly as shown in Fig. 2.



Adjustment Location: control board





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RV206

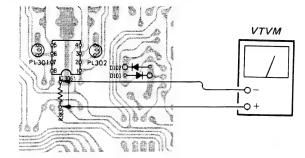
#### REC LEVEL CAL Adjustment

#### Setting:

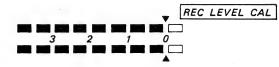
CALIBRATION MODE switch: REC LEVEL

#### Procedure:

- 1. Mode: record
- 2. Adjust RV304 so that the level at the check point (R383) is 3.88 mV (-46 dB).

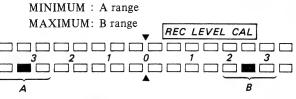


Insert CS-26 (unrecorded tape) and in simultaneous record/play state, adjust RV105 (L-CH) and RV205 (R-CH) immediately after the segment above 0 dB on the meter goes out.

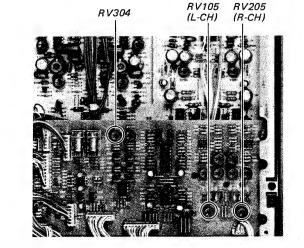


4. Make sure that indication of meter varies as follows when turning REC LEVEL CAL control from mechanical center to MIN and to MAX.

The right segment should be lit up in the following range.



Adjustment Location: control board



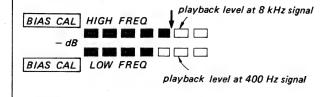
#### **Bias Cal Adjustment**

#### Setting:

CALIBRATION MODE swtich: BIAS

#### Procedure:

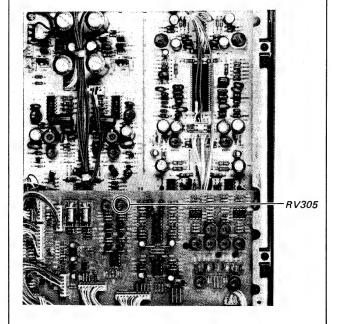
1. Simultaneously record/play state set MONITOR switch to TAPE, insert CS-26 (unrecorded tape), and adjust RV305 so that the LOW FREQ maximum lit element and HIGH FREQ element above it light up completely (the 2 above may blink).



2. Make sure that elements of HIGH FREQUENCY (upper side) vary when turning BIAS CAL control from the mechanical center to MIN nad to MAX. Relative to level at BIAS CAL control center.

MIN: +5 element MAX: -5 element

Adjustment Location: control board



#### IC01, IC601, IC602, IC801 PIN AND VOLTAGE DURING OPERATION

Pin No.	Waveform or Voltage	Pin No.	Waveform or Voltage	Pin No.	Waveform or Voltage
),@	①1.2Vp-p ②1.1Vp-p	(1)		<b>3</b> ,27	0.08 V (switches to PLAY, FF, REW instantaneously)
IC601 <u>8</u>	3Vp-p	(1)		26	0.08V (switches to PLAY instantaneously)
IC602		(4)	0.1V		5V
1	4Vp-p	(15)		29	(when power is on)  0V  5V (when power is off)
8	0.96Vp-p	(6)			4.5Vp-p
		·		30	(FF, PLAY, REW)
1C801 ①,②	2.5Vp-p	(7)	0.1V (REC)	31)	cycle: several mSec – several 10mSec  5V TIMER PLAY: 0V
	0.27μSec	(18) (20)		32	(S801) 5V TIMER REC: 0V (S801)
		20	0.1V (PLAY, FF, REW)	33	5V
3,4	ov	(21)	4.8V	34)	5V HOLDER OPEN: 0V
(5),(8)	0V	22,23		35 4	5V during pushing the control buttons 0.2V
9				42	5V
	••	24	0.08 V (FF, REW)		

Note: Voltages are measured with the oscilloscope with 10  $k\Omega$  probe in this tape. So they differ from the value on the schematic and mounting diagrams a little.

# SECTION 4 DIAGRAMS

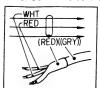
#### Semiconductor Lead Layouts

2SA937 2SC2021	2SC1815-GR 2SC3622A-K 2SD1388	M5238P MSM58141RS NE5532P NJM4560D μPC4558C	AA5525S BR5525S
2SA985-P 2SC2275-P 2SD1266-Q	2SC2603F 2SC2785 2SD1012-F2 DTA114ES DTC114ES DTC144ES	MSL9357RS MSL9358RS μPD550C-047	N13T1
2SA1138 2SB734 2SC2627 2SD774	CX10031A M5240P M5240PR	μРС78М05Н	PG5525SX
2SA1175 2SC2785 2SD1020	16151413121110 9  17 3 4 5 6 7 8  (700 view)  CX20188  MB8841H-1443K	1S1555 10DF2 10YF1.3A 11E2 20E2H HZ6B1L HZ11B1L HZ12A1 HZ12C3L	PY5525S
2SB731	47.40 35 30 75 72 	HZ16-1L HZ20-2L HZ27-1L HZ33-1L	S3VC40
2SD809	DN6838A	1SS202-1	sanode anode salve
2SB1014	M50761-417P  20 18 16 14 12  19 17 15 13 11  10 00 00 00 00 00  1 2 3 4 5 6 7 8 9 10  (Top view)	30DF2 EQB01-06	Cathode anode cathode  THS102A
		29—	3 3∃ Ic 2 2 Vva,Yu

#### 4-1. MOUNTING DIAGRAM - AUDIO BLOCK -

#### Note:

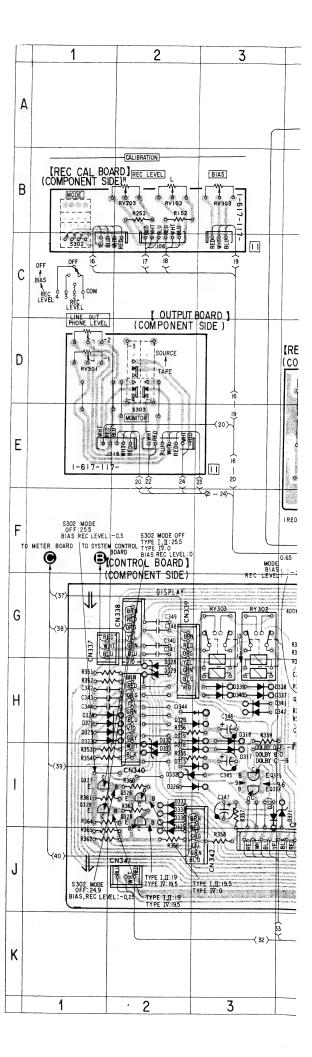
• Color code or sleeving over the end of the jacket.

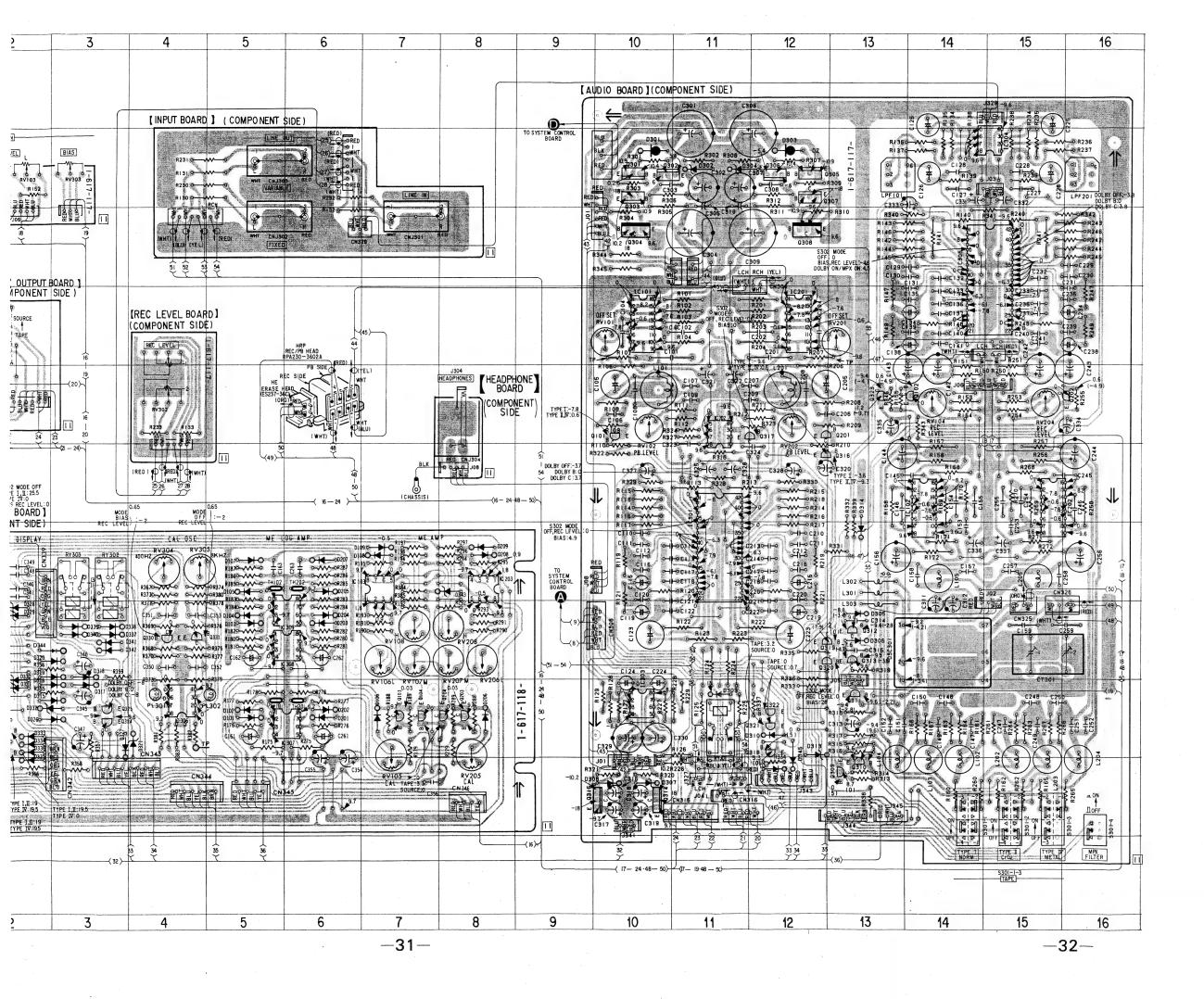


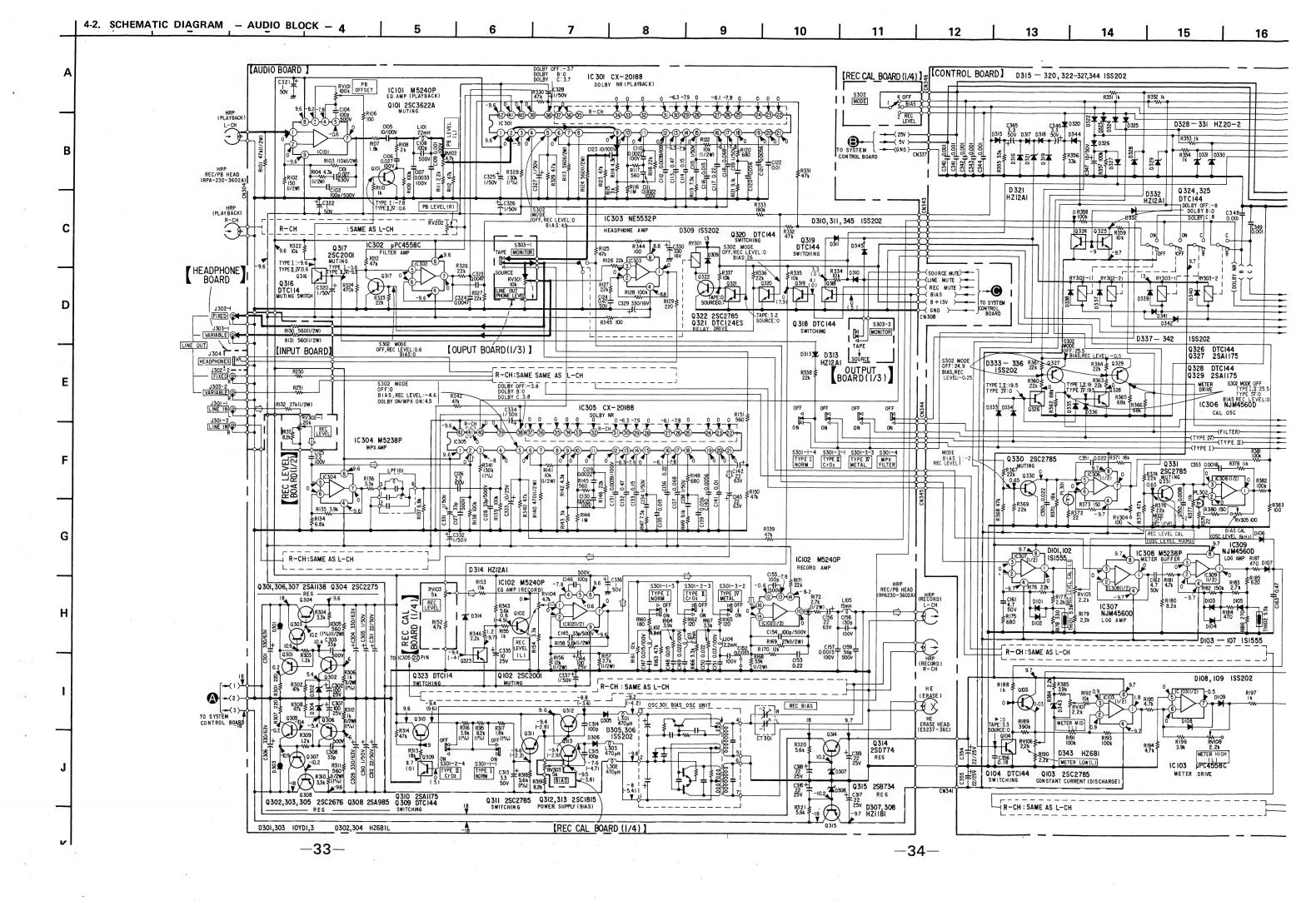
- o-: parts extracted from the component side.
- •— : parts extracted from the conductor side.
- []-: indicates side identified with part number.
- (F) : fusible resistor.
- part mounted on the conductor side.

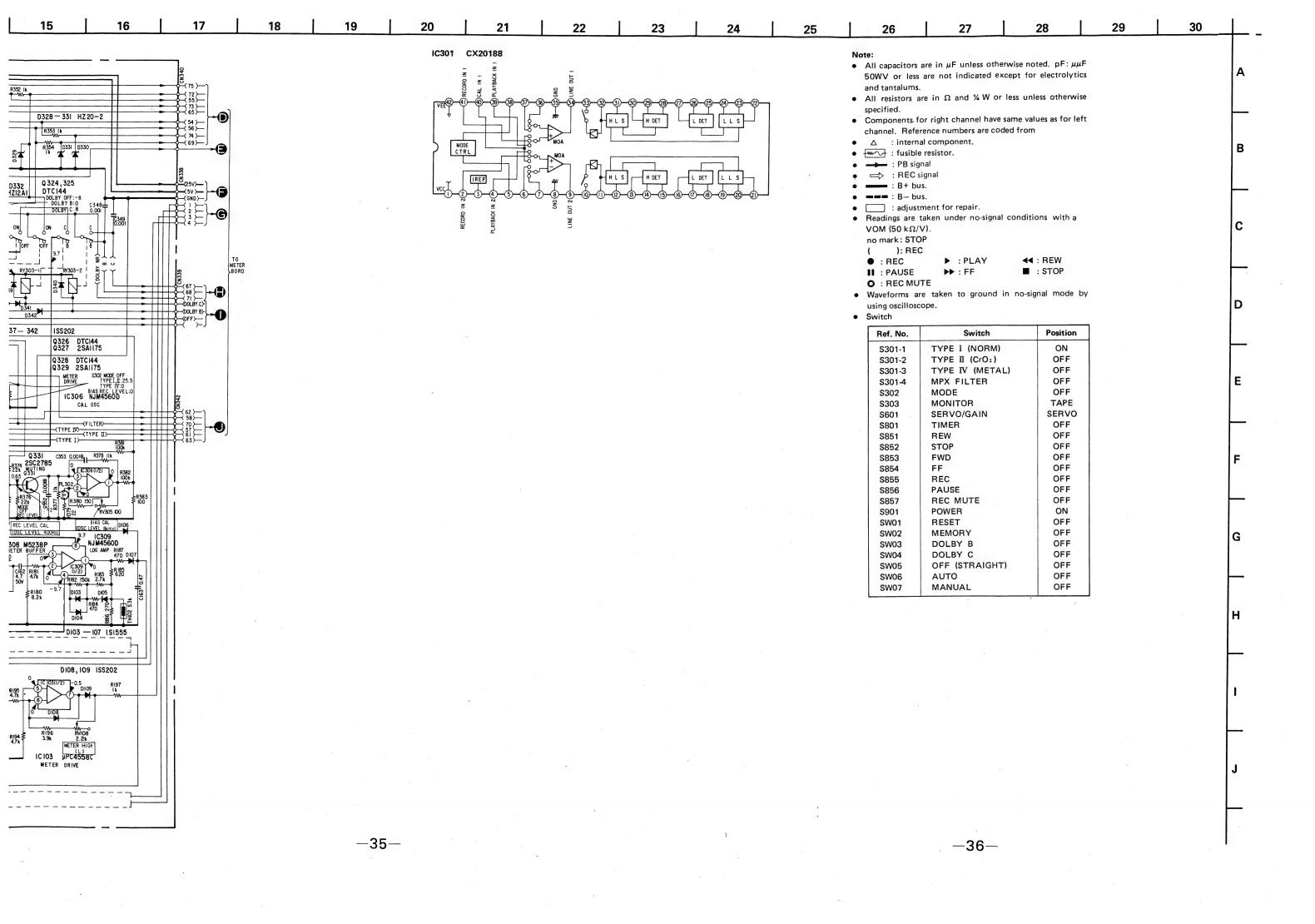
#### • SEMICONDUCTOR LOCATION

Ref. No. Location Ref. No. Location				
Het. No.	Location	Ref. No.	Location	
D101 D102 D103 D104 D105 D106 D107 D108 D109 D201 D201 D202 D203 D204 D205 D206 D207	I-5 I-5 I-5 I-7 I-7 I-6 I-6 I-6 I-8 I-8 I-8 I-8 I-9 I-9 I-9 I-9 I-9 I-9 I-9 I-9 I-9 I-9	IC101 IC102 IC103 IC201 IC202 IC203 IC301 IC302 IC303 IC304 IC306 IC307 IC308 IC309	D-10 F-14 G-7 D-12 F-15 G-8 G-11 I-10 B-15 C-15 I-4 I-6 H-6	
D207 D208 D209 D301 D302 D301 D302 D303 D304 D305 D306 D307 D308 D309 D310 D311 D311 D311 D311 D311 D311 D312 D322 D32	6 G B B H H 13 1 1 1 1 1 1 2 1 2 1 3 3 3 3 3 4 4 1 1 1 1 1 1 2 1 2 2 2 2 2 2 3 3 3 3 3 3	Q101 Q102 Q103 Q104 Q201 Q202 Q203 Q204 Q301 Q302 Q303 Q304 Q305 Q306 Q307 Q308 Q310 Q311 Q312 Q313 Q316 Q317 Q316 Q317 Q318 Q319 Q320 Q321 Q320 Q321 Q322 Q323 Q324 Q325 Q327 Q328 Q329 Q331	E-10 E-14 I-7 I-7 E-13 E-16 I-8 B-10 B-10 B-112 B-12 J-13 J-13 J-13 J-13 J-13 J-13 I-12 I-1 I-2 I-1 I-2 I-4 H-4	







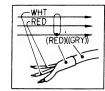


#### 4-3, MOUNTING DIAGRAM - SYSTEM CONTROL BLOCK -

• See page 29 for Semiconductor Lead Layouts.

#### Note:

• Color code or sleeving over the end of the jacket.



• o-: parts extracted from the component side.

• •— : parts extracted from the conductor side.

• []- : indicates side identified with part number.

• (F) : fusible resistor.

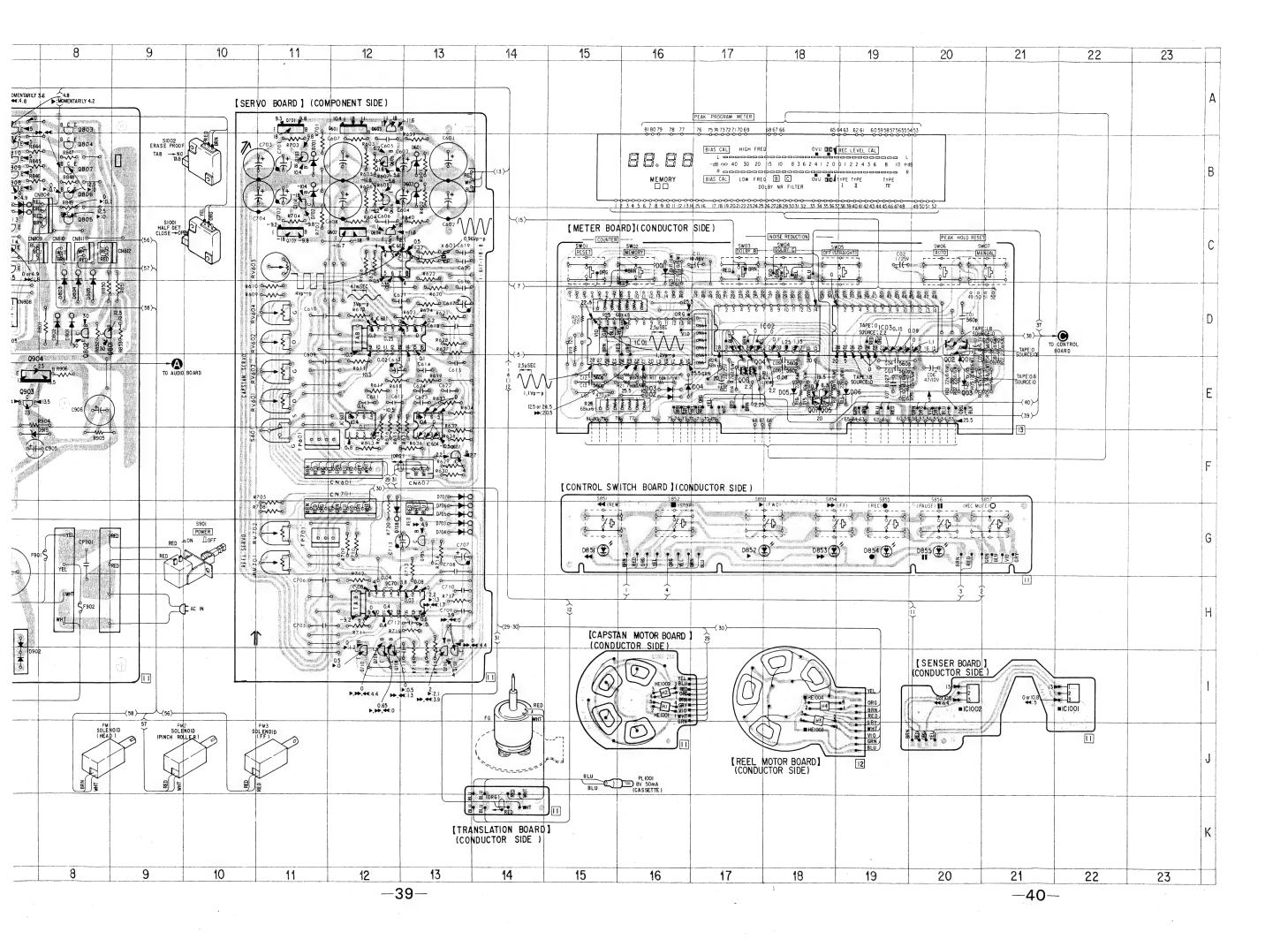
: part mounted on the conductor side.

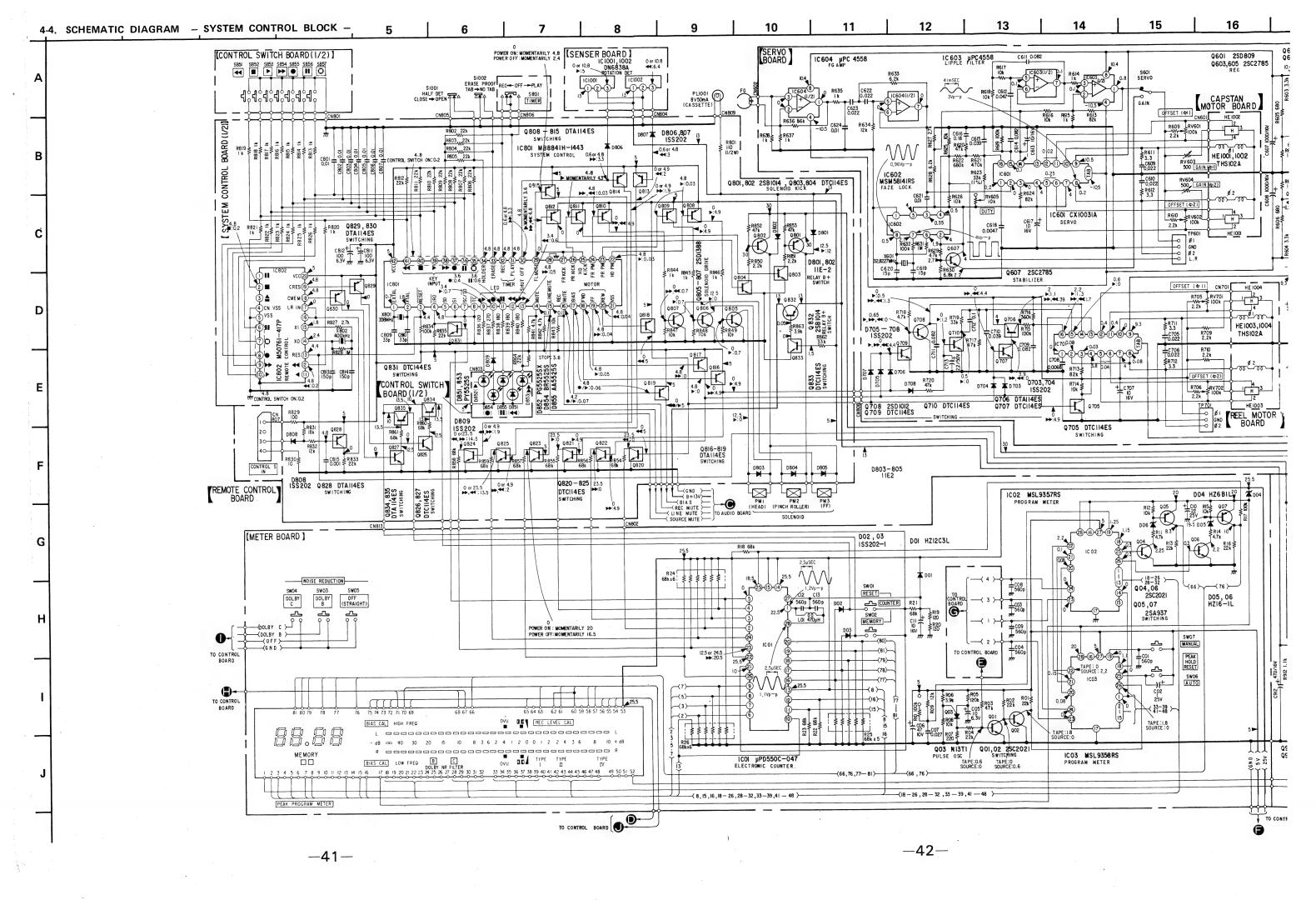
#### • SEMICONDUCTOR LOCATION

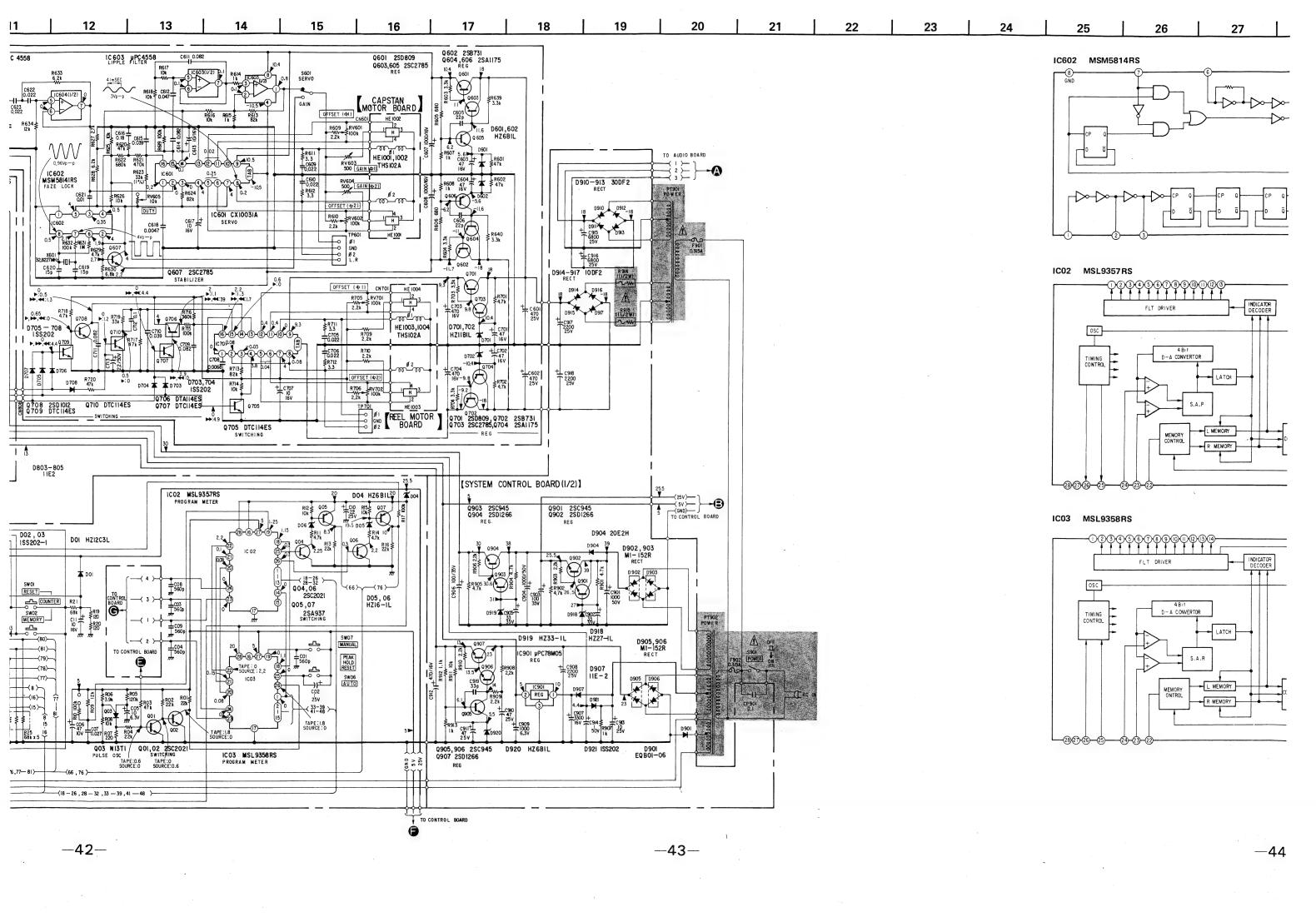
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D01 D02 D03 D04 D05 D06 D601 D602 D701 D702 D703 D704 D705 D706 D707 D708 D801 D802 D803 D804 D805 D806 D807 D808 D809 D851 D852 D853 D854 D855 D901 D902 D903 D904 D905 D906 D907 D908 D907 D910 D911 D912 D913 D914 D915 D916 D917 D918 D919 D920 D921	C-16 E-16 E-16 E-19 B-13 B-11 B-113 G-13 G-13 G-13 G-13 G-13 G-13 G-13	IC01 IC02 IC03 IC601 IC602 IC603 IC604 IC701 IC802 IC901 IC1001 IC1002 Q01 Q02 Q03 Q04 Q05 Q06 Q07 Q601 Q602 Q603 Q604 Q605 Q606 Q607 Q701 Q702 Q703 Q704 Q703 Q704 Q705 Q701 Q702 Q703 Q704 Q705 Q701 Q705 Q701 Q705 Q701 Q705 Q701 Q705 Q701 Q705 Q701 Q705 Q705 Q705 Q705 Q706 Q707 Q701 Q705 Q705 Q706 Q707 Q706 Q707 Q708 Q709 Q710 Q709 Q709 Q710 Q709 Q710 Q709 Q709 Q710 Q709 Q710 Q709 Q710 Q709 Q709 Q710 Q709 Q709 Q710 Q709 Q709 Q709 Q709 Q709 Q709 Q709 Q70	D-16 D-18 D-19 D-12 C-12 E-13 H-12 C-5 B-3 E-4 I-20 D-20 D-20 E-20 E-17 E-18 E-17 E-18 E-17 E-11 B-11 G-13 I-13 I-13 I-12 D-8 B-8 B-8 B-7 B-7 B-7 B-7	Q812 Q813 Q814 Q815 Q816 Q817 Q818 Q819 Q820 Q821 Q822 Q823 Q825 Q826 Q827 Q828 Q829 Q830 Q831 Q831 Q835 Q904 Q902 Q903 Q904 Q905 Q907	B-7 C-7-7 C-7-7-7-6-5-5-4-4-4-4-3-3-3-4-4-3-7-7-3-3-5-5-7-7-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6

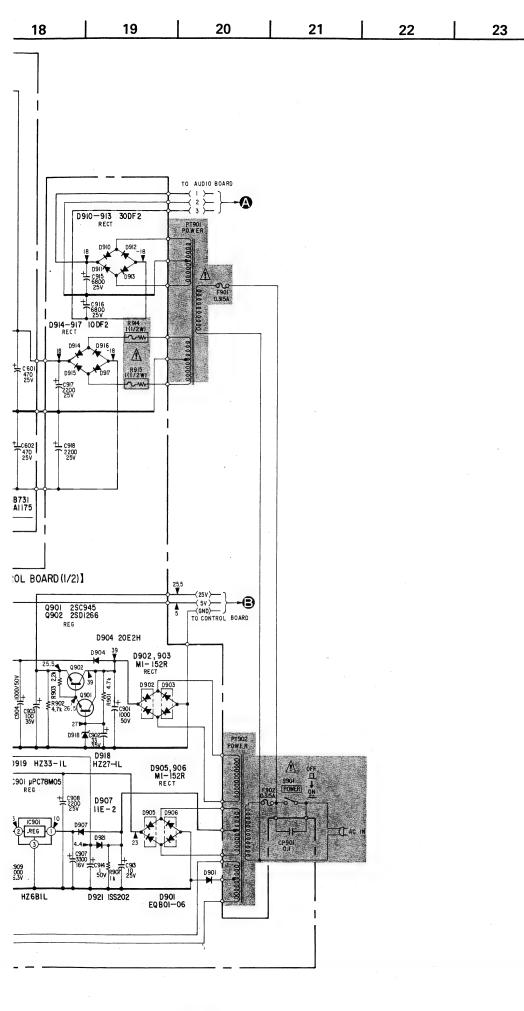
[ SYSTEM CONTROL BOARD] (COMPONENT SIDE) POWER ON: MOMENTARILY 20 POWER OFF: MOMENTARILY 16.5/ TO CONTROL BOARD PT902 POWER [TIMER SWITCH BOARD] [REMOTE CONTROL BOARD] (COMPONENT SIDE) 9 8 -38-

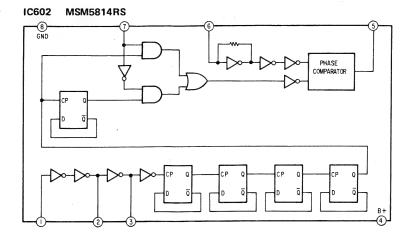
**-37**-











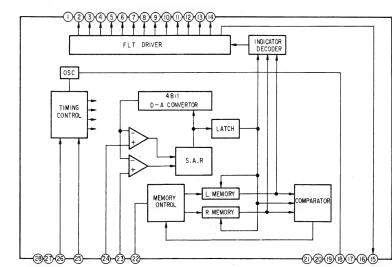
27

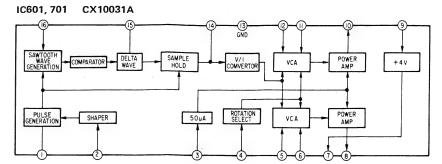
# 

#### IC03 MSL9358RS

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25





#### Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{2}$  W or less unless otherwise specified.
- Components for right channel have same values as for left channel. Reference numbers are coded from
- ullet  $\Delta$  : internal component.
- two: fusible resistor.
- : B+ bus.
- === : B- bus.
- adjustment for repair.
- Readings are taken under no-signal conditions with a VOM (50 k  $\Omega$ /V). no mark: STOP

( ): REC

- : REC
   : PAUSE
- ► : PLAY ►► : FF
- ◀■: REW
   : STOP

33

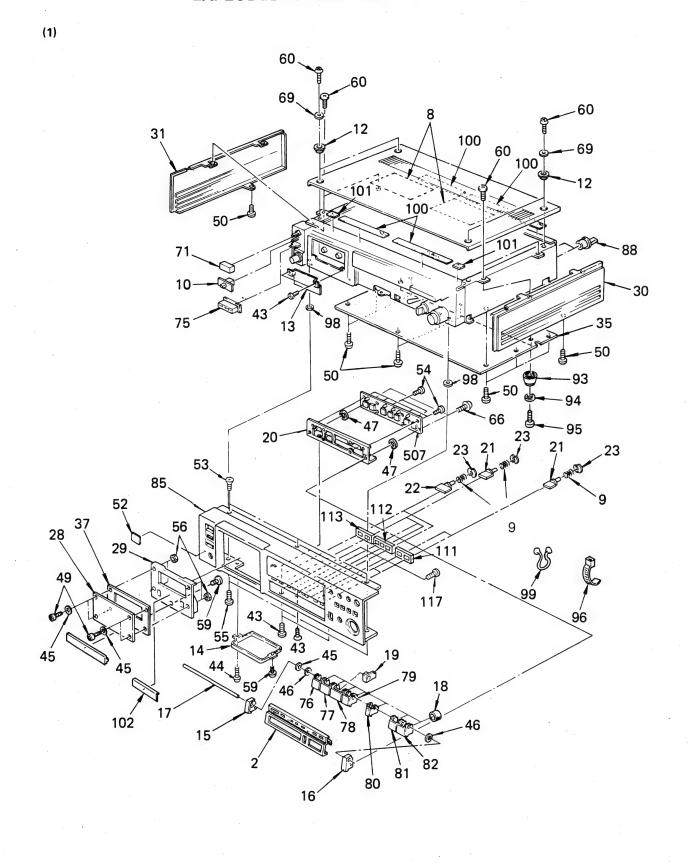
- O : REC MUTE
- Waveforms are taken to ground in no-signal mode by using oscilloscope.
- Switch

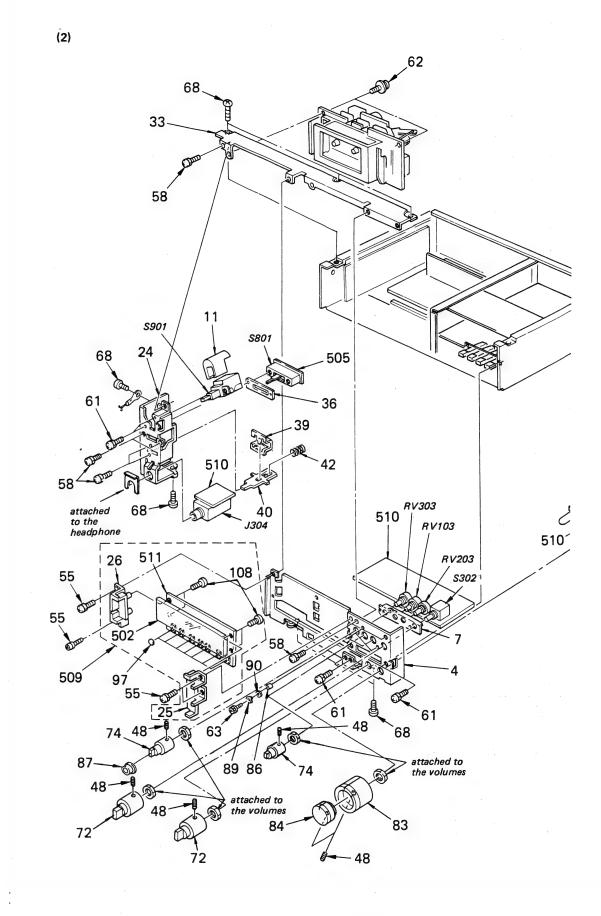
Ref. No.	Switch	Position
S301-1	TYPE I (NORM)	ON
S301-2	TYPE II (CrO <sub>2</sub> )	OFF
S301-3	TYPE IV (METAL)	OFF
S301-4	MPX FILTER	OFF
S302	MODE	OFF
S303	MONITOR	TAPE
S601	SERVO/GAIN	SERVO
S801	TIMER	OFF
S851	REW	OFF
S852	STOP	OFF
S853	FWD	OFF
S854	FF	OFF
S855	REC	OFF
S856	PAUSE	OFF
S857	REC MUTE	OFF
S901	POWER	ON
SW01	RESET	OFF
SW02	MEMORY	OFF
SW03	DOLBY B	OFF
SW04	DOLBY C	OFF
SW05	OFF (STRAIGHT)	OFF
SW06	AUTO	OFF
SW07	MANUAL	OFF

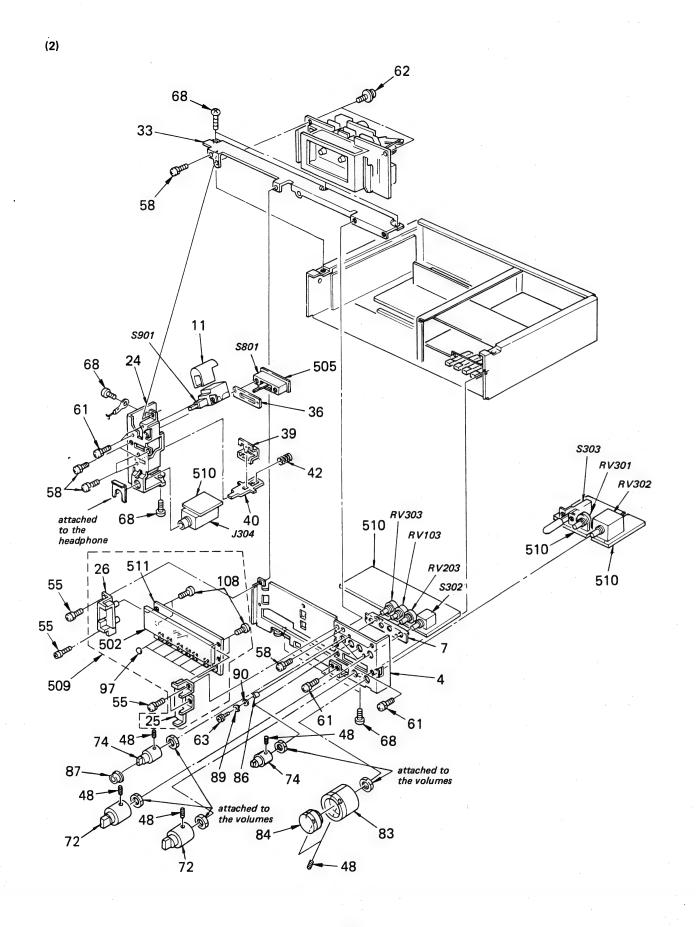
Note: The components identified by shading and mark

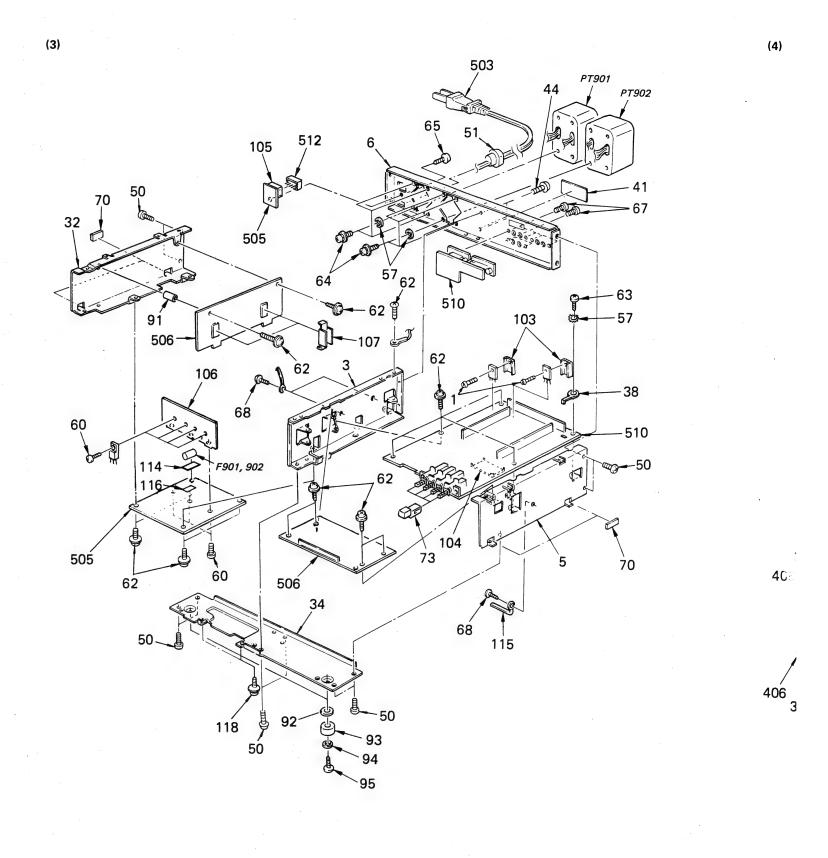
A are critical for safety. Replace only with part number specified.

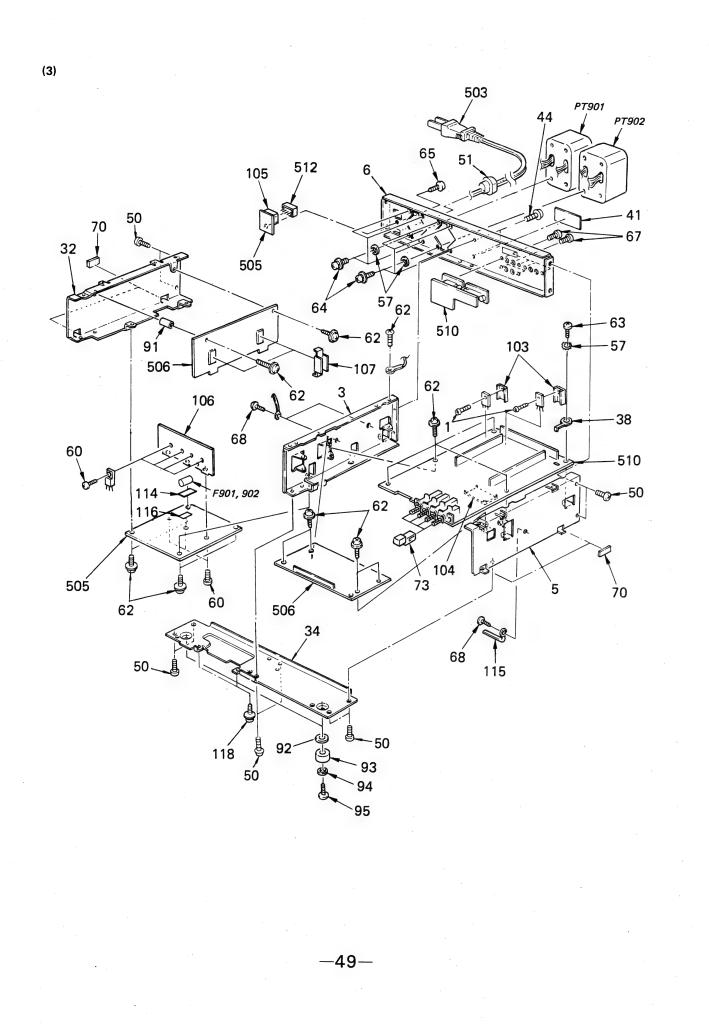
SECTION 5
EXPLODED VIEWS AND PARTS LIST

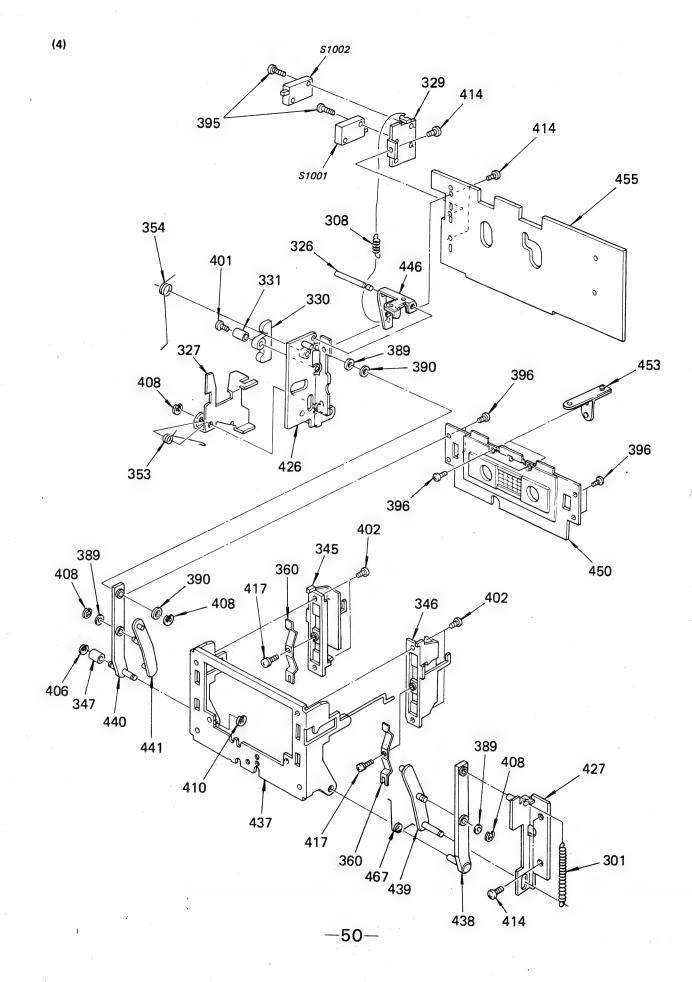


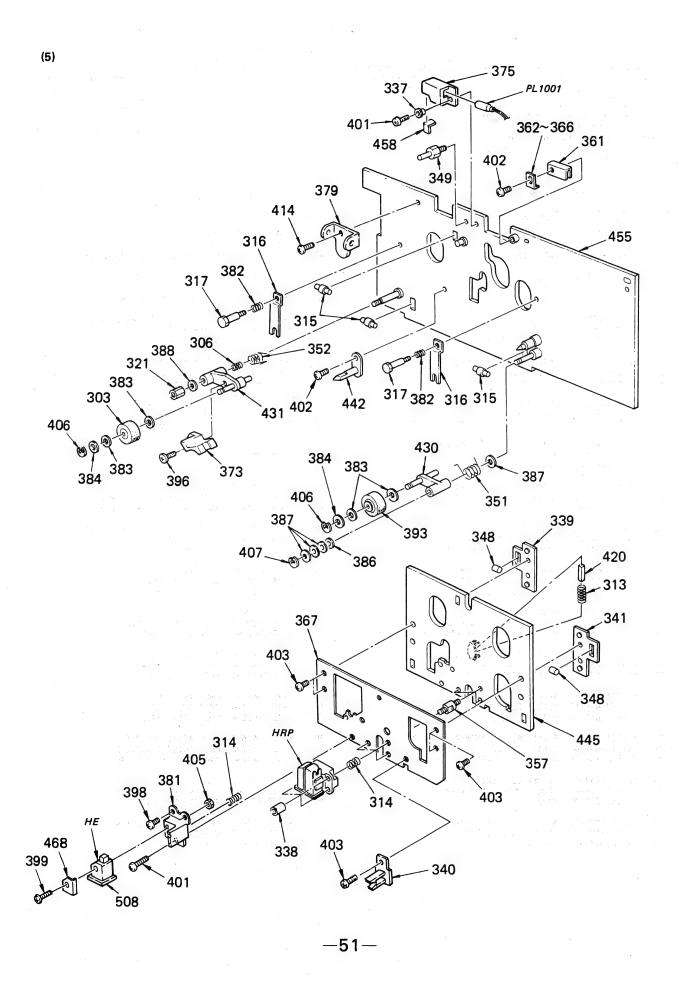


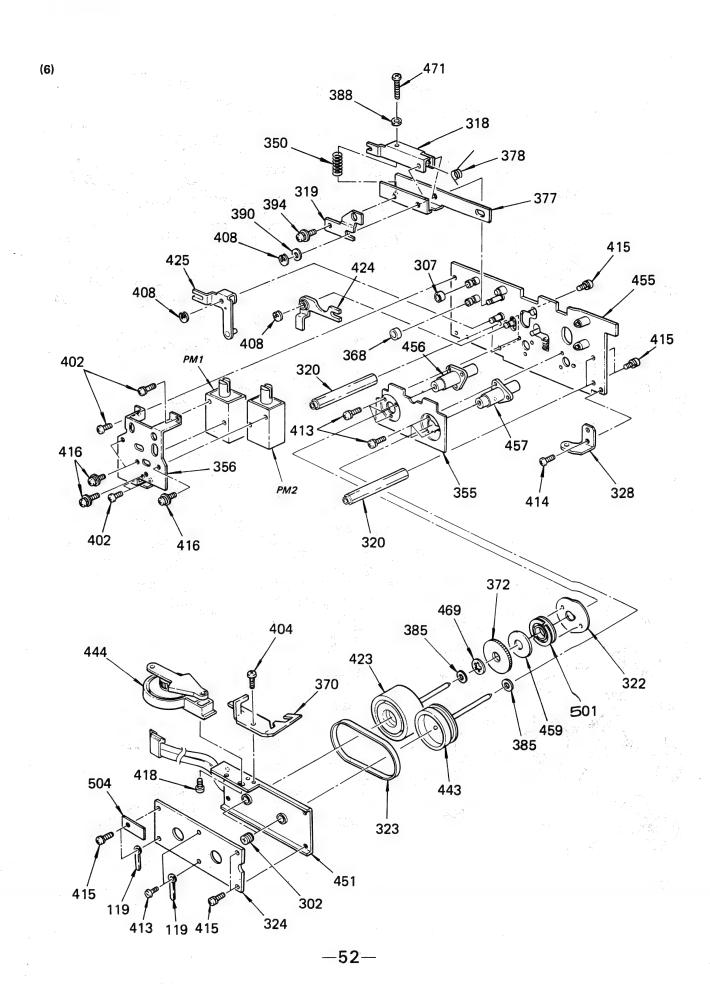


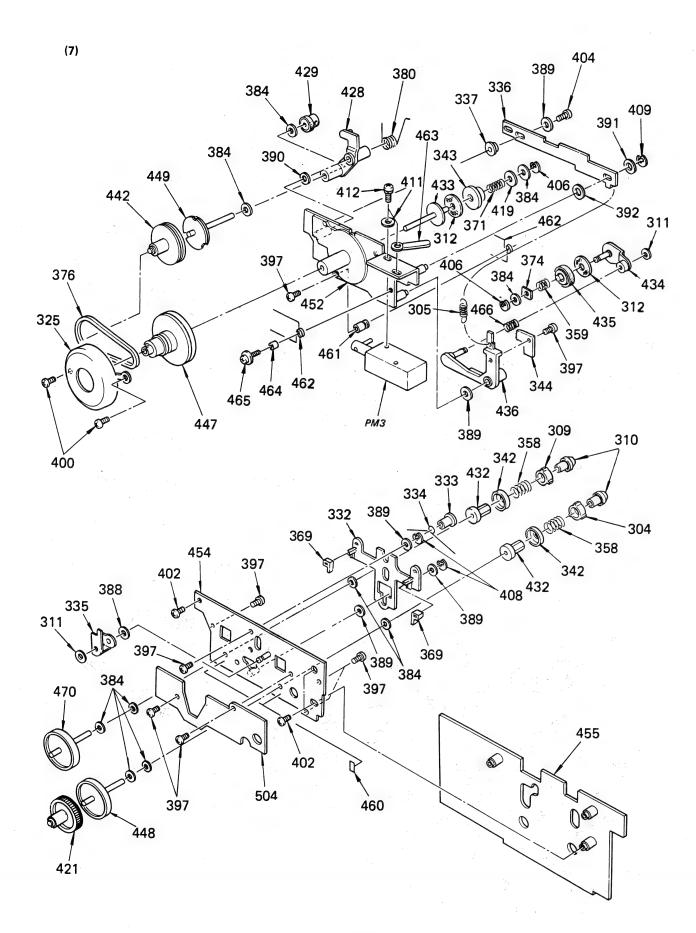












NOTE:

The mechanical parts with no reference number in the exploded views are not supplied.

 Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.  The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by shading and mark ⚠ are critical for safety.

Replace only with part number specified.

#### GENERAL SECTION

	GENERAL	SECTION
No.	Part No.	Description
1	2-259-121-00	SCREW, TR
2	3-311-602-11	SASH (B), CONTROL BUTTON
3	*3-311-635-01	PARTITION, INNER
4 5 6	*3-311-605-11 3-311-633-01 3-311-632-01	CHASSIS (A), AMPLIFIER PLATE, SIDE, RIGHT PLATE, JACK
7	*3-311-608-00	BRACKET, CONTROL
8	*4-908-960-01	SHEET, PS
9	3-489-043-00	SPRING, COMPRESSION
10	3-575-515-41	KNOB, SLIDE SWITCH
11	3-575-524-00	COVER, POWER SWITCH
12	3-576-298-11	ESCUTCHEON
13	*3-576-930-00	PLATE, SHIELD, HEAD
14	3-577-602-00	COVER, MECH DECK
15	3-577-604-11	PLATE (L), SIDE, CONTROL BLOCK
16	3-577-605-11	PLATE (R), SIDE, CONTROL BLOCK
17	3-577-606-11	SHAFT
18	3-577-607-00	SPACER, CONTROL BUTTON
19	3-577-615-00	GUIDE, SHAFT, CONTROL BUTTON
20	*3-577-624-00	BRACKET, CONTROL BLOCK
21	3-577-638-11	PUSH BUTTON (A)
22 23 24	3-577-640-11 3-577-644-00 *3-577-647-00	PUSH BUTTON (B) SPACER, PUSH BUTTON CHASSIS (B), AMPLIFIER
25	*3-577-648-00	BRACKET (R), FL TUBE
26	*3-577-649-00	BRACKET (L), FL TUBE
27	3-577-655-11	SASH, CASSETTE WINDOW
28	3-311-627-01	WINDOW, CASSETTE
29	3-577-658-11	FRAME, CASSETTE WINDOW
30	3-577-662-11	PLATE, SIDE, ORNAMENTAL, RIGHT
31	3-577-663-11	PLATE, SIDE, ORNAMENTAL, LEFT
32	*3-311-634-01	PLATE, SIDE, LEFT
33	*3-577-666-00	REINFORCEMENT, UPPER
34	*3-577-667-21	REINFORCEMENT, LOWER
35	*3-577-669-11	PLATE, BOTTOM
36	3-577-674-00	SPACER, SWITCH
37 38 39	3-311-629-01 4-870-539-00 *3-577-692-00	PLATE (B), ORNAMENTAL, WINDOW PLATE, GROUND GUIDE (B), EJECT
40	*3-577-693-00	SLIDER (B), EJECT
41	*3-311-639-01	LABEL, MODEL NUMBER (AE)
42	3-583-507-00	SPRING
43	3-701-428-21	SCREW, +B 2.6X4, PAWL
44	3-701-429-21	SCREW, +B 3X5, PAWL
45	3-701-438-11	WASHER, 2.5

#### GENERAL SECTION

No.	Part No.	Description
46	3-701-438-21	WASHER
47	3-701-439-01	WASHER
48	3-701-505-00	SET SCREW, DOUBLE POINT 3X3
49	7-683-413-05	BOLT, HEXAGON SOCKET 2.6X8
50	3-703-108-21	SCREW +BV 3X6, S TIGHT
51	3-703-244-00	BUSHING (2104), CORD
52	3-703-710-41	STICKER, SONY SYMBOL (12)
53	7-621-559-30	SCREW +K 2.6X5
54	7-621-770-44	SCREW +B 2X5
55	7-621-773-95	SCREW +B 2.6X6
56	7-622-207-05	N 2.6, TYPE 2
57	7-623-422-07	LW 3, TYPE B
58	7-628-254-15	SCREW +PS 2.6X6
59	7-682-545-09	SCREW +B 3X4
60	7-682-547-09	SCREW +B 3X6
61	7-682-647-01	SCREW +PS 3X6
62	7-682-947-01	SCREW +PSW 3X6
63	7-682-948-01	SCREW +PSW 3X8
64	7-682-948-09	SCREW +PSW 3X8
65	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S
66	7-685-534-21	SCREW +BTP 2.6X8 TYPE2 SLIT
67	7-685-545-29	SCREW +BTP 3X6 TYPE2 SLIT
68	7-685-871-01	SCREW +BVTT 3X6 (S)
69	7-688-003-12	W 3, MIDDLE
70	9-911-841-XX	CUSHION
71	X-3575-502-6	KNOB ASSY, POWER
72	X-3577-603-5	KNOB ASSY, MODE
73	X-3577-606-2	KNOB ASSY, SQUARE
74	X-3577-607-4	KNOB ASSY, REC CAL
75	X-3577-608-2	KNOB ASSY, EJECT
76	X-3577-610-4	KNOB ASSY, REW
77	X-3577-611-4	KNOB ASSY, STOP
78	X-3577-612-4	KNOB ASSY, FWD
79	X-3577-613-4	KNOB ASSY, FF
80	X-3577-614-4	KNOB ASSY, REC
81	X-3577-615-4	KNOB ASSY, PAUSE
82	X-3577-616-4	KNOB ASSY, REC MUTE
83	X-3577-617-0	KNOB (RIGHT) ASSY, REC
84	X-3577-618-0	KNOB (LEFT) ASSY, REC
85	X-3577-622-1	PANEL ASSY
86	3-311-622-00	SPACER, VT
87	3-577-676-00	SPACER, REC KNOB
88	4-854-741-00	CAP, DUST PROTECTION, P.J
89	7-623-710-17	WASHER 4, WAVE
90	7-688-004-01	W 4, SMALL

#### GENERAL SECTION

No.	Part No.	Description
	*3-311-625-01 *3-311-630-01 4-901-947-01	SPACER
94 95 96	4-836-939-00 7-685-755-04 *3-701-748-00	SCREW +BYTT 3X14 (S)
97 98 99	3-312-975-31 3-311-623-11 *2-056-666-00	SPACER
100 101 102	3-831-441-XX 9-911-837-XX 3-311-631-01	CUSHION (B), FILTER
103 104 105	*3-309-144-01 *3-311-636-01 4-882-034-00	PLATE, SHIELD
106 107 108	*3-311-628-01 *3-310-859-00 7-685-133-14	HEAT SINK, IC
111 112 113	3-577-637-00 3-577-639-00 3-311-601-00	GUIDE (A), BUTTON GUIDE (B), BUTTON GUIDE (C), BUTTON
114 115 116	9-911-863-XX *3-701-822-00 *3-701-948-09	HOLDER, WIRE
117 118 119	7-621-775-20 7-682-947-09 *3-703-150-11	SCREW +B 2.6X5 SCREW +PSW 3X6 CLAMP

#### MECHANISM SECTION

No.	Part No.	Description
301	3-140-235-XX	SPRING, TENSION
302	3-489-073-21	SCREW, THRUST
303	3-491-020-00	PINCH ROLLER
304	3-531-760-00	CLAW, REEL SPINDLE
305	3-562-823-00	SPRING, TENSION
306	3-537-213-00	SPRING, COMPRESSION
307	*4-911-035-01	TUBE, LED
308	3-541-231-00	SPRING, TENSION
309	3-558-339-00	CLAW (R), REEL TABLE
310	3-576-983-01	CAP, REEL
311	3-558-708-21	WASHER, STOPPER
312	3-564-027-01	FELT, LIMITER
313	3-564-035-00	SPRING, COMPRESSION
314	3-564-121-00	SPRING, COMPRESSION
315	3-576-801-00	ROLLER, BASE, HEAD
316	*3-576-802-00	RETAINER, ROLLER
317	3-576-803-00	SHAFT, RETAINER, ROLLER
318	*3-576-805-00	LEVER (B), HEAD UP
319	*3-576-806-00	DISK, ARM, TAKE-UP
320	*3-576-807-00	SUPPORT (B)
321	3-576-808-00	ADJUSTOR, PINCH ROLLER
322	*3-576-810-00	PLATE, RETURN CIRCUIT
323	3-576-812-00	BELT, CAPSTAN
324	*3-576-815-00	REINFORCEMENT, BASE
325	*3-576-816-00	CASE, SHIELD, RM
326	*3-576-819-00	SHAFT, LEVER, GB
327	*3-576-820-00	ARM, LOCK
328	*3-576-821-00	BRACKET, CHASSIS, MECHANISM
329	*3-576-822-00	HOLDER (A), SE
330	*3-576-823-00	ARM, E
331	3-576-824-00	COLLAR
332	*3-576-827-00	PLATE, BRAKE
333	*3-576-828-00	SHAFT, SPRING, BRAKE
334	3-576-981-01	SPRING
335	*3-576-830-00	ARM, BRAKE
336	*3-576-831-00	LEVER, SELECT, MODE
337	*3-576-832-00	GUIDE, SELECTOR, MODE
338	3-576-834-00	NUT, LOCK
339	*3-576-836-00	RETAINER (L), ROLLER
340	3-576-837-00	CLAMP, LEAD
341	*3-576-838-00	RETAINER (R), ROLLER
342	3-576-840-00	RING, TABLE, REEL
343	3-576-841-00	PULLEY, LIMITER
344	*3-576-842-00	STOPPER, B.T
345	3-576-843-00	GUIDE (LEFT), HOLDER

# TC-K777ESII

SECTION

No.	Part No.	Description
346	3-576-844-00	GUIDE (RIGHT), HOLDER
347	3-576-845-00	ROLLER
348	3-576-909-00	ROLLER (C)
349	3-576-911-00	PIN (A), POSITIONING, HALF
350	3-576-912-00	SPRING, COMPRESSION
351	3-576-913-00	SPRING (T)
352	3-576-914-00	SPRING (S)
353	3-576-915-00	SPRING
354	3-576-916-00	SPRING
355	*3-576-917-00	PLATE, SHIELD
356	*3-576-918-00	BRACKET (B), CHASSIS, MECH
357	3-576-920-00	SHAFT, SUPPORT, HEAD
358	3-576-921-00	SPRING, COMPRESSION
359	3-576-922-00	SPRING, COMPRESSION
360	3-576-924-00	SPRING
361	*3-576-948-00	STOPPER, CHASSIS, HEAD
362	3-576-950-01	SHIM, STOPPER
363	3-576-950-11	SHIM, STOPPER
364	3-576-950-21	SHIM, STOPPER
365	3-576-950-31	SHIM, STOPPER
366	3-576-950-41	SHIM, STOPPER
367	*3-576-951-00	SHIELD, CHASSIS, HEAD
368	*3-576-954-00	RETAINER, SOLENOID
369	3-576-958-01	SHOE, BRAKE
370	*3-576-959-00	RETAINER, TU PULLEY
371	3-576-960-00	SPRING, COMPRESSION
372	*3-576-961-00	PLATE, FG
373	3-576-962-00	GUIDE, TAPE
374	3-576-963-00	WASHER, STOPPER
375	3-576-966-00	HOLDER (A), LAMP
376	3-576-967-00	BELT, TAKE-UP
377	*3-576-969-00	LEVER (A), HEAD UP
378	3-576-953-00	SPRING
379	*3-576-971-00	HOLDER, GB
380	3-576-980-01	SPRING
381	*3-576-977-00	BRACKET, E. HEAD
382	3-634-196-00	SPRING
383	3-701-437-01	WASHER
384	3-701-437-11	WASHER
385 386 387	3-701-438-11 3-701-439-01 3-701-439-11	
388 389 390	3-701-439-21 3-701-441-11 3-701-441-21	WASHER

#### MECHANISM SECTION

No.	Part No.	Description
391	3-701-443-11	WASHER
392	3-701-443-21	WASHER, 5
393	*3-701-455-00	PINCH ROLLER
394	7-621-759-35	+PSW, 2.6X5
395	7-621-770-96	SCREW +B 2X8
396	7-621-772-10	SCREW +B 2X4
397	7-621-772-15	SCREW +B 2X4
398	7-621-772-40	SCREW +B 2X8
399	7-621-772-60	SCREW +B 2X12
400	7-621-773-93	SCREW +B 2.6X3
401	7-621-773-95	SCREW +B 2.6X6
402	7-621-775-10	SCREW +B 2.6X4
403	7-621-775-20	SCREW +B 2.6X5
404	7-621-775-25	SCREW +B 2.6X5
405	7-622-205-05	NUT M2 TYPE2
406	7-624-102-04	STOP RING 1.5, TYPE -E
407	7-624-105-04	STOP RING 2.3, TYPE -E
408	7-624-106-04	STOP RING 3.0, TYPE -E
409	7-624-108-04	STOP RING 4.0, TYPE -E
410	7-624-118-01	RING, RETAINING E-2.5
411	7-688-002-11	W 2.6, MIDDLE
412	7-628-253-95	SCREW +PS 2.6X4
413	7-628-254-15	SCREW +PS 2.6X6
414	7-682-546-09	SCREW +B 3X5
415	7-682-647-01	SCREW +PS 3X6
416	7-682-946-01	SCREW +PSW 3X5
417	7-687-202-21	TOTSU PTPWH 2X4, TYPE 2, SLIT
418 419 420	7-687-246-21 7-688-001-11 9-911-815-02	SCREW, TOTSU PTPWH 3X8, TYPE2 W 2, MIDDLE CUSHION
421	A-2131-003-B	DRUM COMPLETE ASSY, BT
422	A-2138-004-A	HOLDER COMPLETE ASSY, MAGNET
423	X-3310-811-0	FLYWHEEL (T) ASSY
424 425 426	*X-3576-801-0 *X-3576-802-0 *X-3576-805-0	LEVER ASSY, CHANGE
427 428 429	*X-3576-806-0 X-3576-812-0 X-3576-813-0	ARM ASSY, TAKE-UP
430	X-3576-815-0	PINCH LEVER (T) ASSY
431	X-3576-816-0	PINCH LEVER (S) ASSY
432	X-3576-817-0	TABLE (B) ASSY, REEL
433	X-3576-819-0	PULLEY (2) ASSY, MOTOR, REEL
434	X-3576-821-0	ARM (2) ASSY, FR
435	X-3576-822-0	IDLER ASSY, FR

#### MECHANISM SECTION

No.	Part No.	Description
436	*X-3576-823-0	ARM (1) ASSY, FR
437	X-3576-824-0	HOLDER ASSY, CASSETTE
438	*X-3576-825-0	LEVER ASSY (R), SWING
439	X-3576-826-0	ARM ASSY (R), CONNECT
440	*X-3576-827-0	LEVER ASSY (L), SWING
441	X-3576-828-0	ARM ASSY (L), CONNECT
442	X-3576-831-0	GUIDE ASSY, CASSETTE
443	X-3576-856-1	FLYWHEEL (S) ASSY
444	X-3576-833-0	SE ASSY
445	X-3576-834-0	CHASSIS ASSY, HEAD
446	X-3576-839-1	LEVER ASSY, GB
447	X-3576-840-1	PULLEY ASSY, MOTOR
448	X-3576-859-1	REEL ASSY, SUPPLY
449	X-3576-843-1	HP HOLDER ASSY
450	X-3576-845-2	BACK PLATE ASSY
451	X-3576-858-1	CHASSIS ASSY, MOTOR
452	X-3576-849-3	CHASSIS ASSY, SUB
453	X-3576-850-0	SPRING ASSY
454	*X-3576-852-0	COVER ASSY, SUB CHASSIS
455	*X-3576-857-1	CHASSIS ASSY, MECHANICAL
456	X-3576-854-1	HOLDER (A) ASSY
457	X-3576-855-1	HOLDER (B) ASSY
458	*3-576-978-00	FILM, RH
459	3-310-865-00	WASHER, INSULATING
460	*3-576-988-01	RETAINER, IC, HOLE
461	*3-576-986-01	SHAFT, SPRING HOOK
462	3-576-982-01	SPRING (A)
463	*3-701-822-00	HOLDER, WIRE
464	*3-657-841-61	SPACER (2X1.6)
465	7-621-955-15	SCREW, TOTSU PWH 2X3
466	3-575-414-00	SPRING, COMPRESSION
467	3-576-979-01	SPRING, TORSION
468	3-318-433-01	SPRING
469	4-312-164-00	RING, RETAINING
470	X-3576-860-1	REEL ASSY, TAKE-UP
471	7-621-775-75	+B 2.6X14

### SECTION 6 **ELECTRICAL PARTS LIST**

- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be antici-pated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS: MF:μF, PF:μμF.

RESISTORS

· All resistors are in ohms. · F : nonflammable

COILS · MMH : mH, UH : μΗ

SEMICONDUCTORS

In each case, U : μ, for example:
UA...: μΑ..., UPA...: μΡΑ..., UPC...: μPC,
UPD...: μPD...

The components identified by shading and mark Aare critical for safety.
Replace only with part number specified.

ELECTRICAL PARTS	010	.: µrv		ELECTRIC	AL PARTS			
Ref.No. Part No. Description			Ref.No.	Part No.	Description			
501 1-459-426-00 COIL 502 1-519-277-00 INDICATOR TUBE, FLUORESC 503 A-550-155-00 CORD POWER	CENT		C122 C123 C124	1-136-153-00 1-124-336-00 1-124-270-11	ELECT	0.01MF 10MF 0.47MF	5% 20% 20%	50V 100V 50V
504 *1-617-119-11 PC BOARD, SENSOR 505 *A-2019-193-A PC BOARD ASSY, SYSTEM CO 506 *A-2020-079-A PC BOARD ASSY, CONTROL S	NTROL SERVO		C125 C126 C127	1-124-332-00 1-124-332-00 1-107-317-00	ELECT ELECT MICA	2.2MF 2.2MF 33PF	20% 20% 5%	100V 100V 500V
507 *1-604-296-00 PC BOARD, CONTROL SW 508 *1-608-268-00 PC BOARD, ERASE HEAD 509 *A-2029-095-A PC BOARD ASSY, METER			C128 C129 C130	1-107-317-00 1-136-230-00 1-136-230-00	MICA FILM FILM	33PF 0.0022MF 0.0022MF	5% 3% 3%	500V 100V 100V
510 *A-2056-295-A PC BOARD ASSY, AUDIO 511 *1-608-963-00 PC BOARD, METER 512 *1-560-039-00 PIN, CONNECTOR			C131 C132 C133	1-130-287-00 1-136-173-00 1-136-167-00	FILM FILM FILM	0.0039MF 0.47MF 0.15MF	5% 5% 5%	100V 50V 50V
CO1 1-162-291-31 CERAMIC 560PF	10%	50V	C134	1-124-182-00	FILM	1MF	20%	50V
CO2 1-131-347-00 TANTALUM 1MF	20%	25V	C135	1-136-155-00		0.015MF	5%	50V
CO3 1-162-291-31 CERAMIC 560PF	10%	50V	C136	1-136-169-00		0.22MF	5%	50V
CO4 1-162-291-31 CERAMIC 560PF	10%	50V	C137	1-136-163-00	FILM	0.068MF	5%	50V
CO5 1-131-383-00 TANTALUM 10MF	10%	6.3V	C138	1-124-182-00	ELECT	1MF	20%	50V
CO6 1-123-306-00 ELECT 47MF	20%	10V	C139	1-136-162-00	FILM	0.056MF	5%	50V
CO7 1-136-158-00 FILM 0.027MF	5%	50V	C140	1-130-291-00	FILM	0.0056MF	5%	100V
CO8 1-162-291-31 CERAMIC 560PF	10%	50V	C141	1-136-153-00	FILM	0.01MF	5%	50V
CO9 1-162-291-31 CERAMIC 560PF	10%	50V	C142	1-123-371-00	ELECT	22MF	20%	63V
C10 1-123-330-00 ELECT 22MF	20%	25V	C143	1-123-371-00		22MF	20%	63V
C11 1-131-371-00 TANTALUM 10MF	20%	16V	C144	1-123-333-00		100MF	20%	25V
C12 1-162-291-31 CERAMIC 560PF	10%	50V	C145	1-107-317-00		33PF	5%	500V
C13 1-162-291-31 CERAMIC 560PF	10%	50V	C146	1-107-309-00	MICA	100PF	5%	500V
C101 1-130-683-00 FILM 0.027MF	2%	630V	C147	1-130-892-00	FILM	0.015MF	3%	100V
C102 1-107-309-00 MICA 100PF	5%	500V	C148	1-136-155-00	FILM	0.015MF	5%	50V
C104 1-107-309-00 MICA 100PF	5%	500V	C149	1-130-973-00	FILM	0.022MF	3%	100V
C105 1-124-336-00 ELECT 10MF	20%	100V	C150	1-136-157-00	FILM	0.022MF	5%	50V
C106 1-130-893-00 FILM 0.027MF	3%	100V	C151	1-130-972-51	FILM	0.02MF	3%	100V
C107 1-130-285-00 FILM 0.0033MF C108 1-107-309-00 MICA 100PF C109 1-130-273-00 FILM 0.001MF	5% 5%	100V 500V 100V	C152 C153 C154		FILM FILM MICA	0.0033MF 0.22MF 100PF	5% 5% 5%	100V 50V 500V
C110 1-136-230-00 FILM 0.0022MF	3%	100V	C155		MICA	100PF	5%	500V
C111 1-136-230-00 FILM 0.0022MF	3%	100V	C156		ELECT	22MF	20%	63V
C112 1-130-287-00 FILM 0.0039MF	5%	100V	C157		FILM	0.00 <b>1</b> 5MF	5%	100V
C113 1-136-173-00 FILM 0.47MF	5%	50V	C158		MICA	130PF	5%	100V
C114 1-136-167-00 FILM 0.15MF	5%	50V	C159		MICA	56PF	5%	500V
C115 1-124-182-00 ELECT 1MF	20%	50V	C161		ELECT	4.7MF	20%	50V
C116 1-136-155-00 FILM 0.015MF C117 1-136-169-00 FILM 0.22MF C118 1-136-163-00 FILM 0.068MF	5% 5%	50V 50V 50V	C162 C163 C201	1-124-185-00 1-136-173-00 1-130-683-00	ELECT FILM FILM	4.7MF 0.47MF 0.027MF	20% 5% 2%	50V 50V 630V
C119 1-124-182-00 ELECT 1MF	20%	50V	C202	1-107-309-00	MICA	100PF	5%	500V
C120 1-136-162-00 FILM 0.056MF	5%	50V	C204	1-107-309-00	MICA	100PF	5%	500V
C121 1-130-291-00 FILM 0.0056MF	5%	100V	C205	1-124-336-00	ELECT	10MF	20%	100V

	ELECTRICAL PARTS			1		ELECTRIC	CAL PARTS					ELECTRI	CAL PARTS			1		ELECTRI	CAL PARTS			
Ref.No.	Part No. Description				Ref.No.	Part No.	Description				Ref.No.	Part No.	Description				Ref.No.	Part No.	Description	1		
C206 C207 C208	1-130-893-00 FILM 1-130-285-00 FILM 1-107-309-00 MICA	0.027MF 0.0033MF 100PF	3% 5% 5%	100V 100V 500V	C301 C302 C303	1-123-390-00 1-123-333-00 1-107-317-00	ELECT	330MF 100MF 33PF	20% 20% 5%	63V 25V 500V	C603 C604 C605	1-123-332-00 1-123-332-00 1-162-207-31	ELECT	47MF 47MF 22PF	20% 20% 5%	16V 16V 50V	C909 C910 C911	1-123-299-00 1-123-332-00 1-123-332-00	ELECT	1000MF 47MF 47MF	20% 20% 20%	6.3V 25V 25V
C209 C210 C211	1-130-273-00 FILM 1-136-230-00 FILM 1-136-230-00 FILM	0.001MF 0.0022MF 0.0022MF	5% 3% 3%	100V 100V 100V	C304 C305 C306	1-123-390-00 1-131-450-00 1-123-390-00	TANTALUM	330MF 1MF 330MF	20% 20% 20%	63Y 50Y 63Y	C606 C607 C608	1-162-207-31 1-123-324-00 1-123-324-00	ELECT	22PF 1000MF 1000MF	5% 20% 20%	50V 16V 16V	C912 C913 C914	1-123-323-00 1-123-356-00 1-123-380-00	ELECT	470MF 10MF 1MF	20% 20% 20%	16V 25V 50V
C212 C213 C214	1-130-287-00 FILM 1-136-173-00 FILM 1-136-167-00 FILM	0.0039MF 0.47MF 0.15MF	5% 5% 5%	100V 50V 50V	C307 C308 C309	1-123-333-00 1-107-317-00 1-123-390-00	MICA	100MF 33PF 330MF	20% 5% 20%	25V 500V 63V	C609 C610 C611	1-161-494-00 1-161-494-00 1-136-164-00	CERAMIC	0.022MF 0.022MF 0.082MF	30% 30% 5%	25V 25V 50V	C915 C916 C917	1-124-346-00 1-124-346-00 1-123-338-00	ELECT	6800MF 6800MF 2200MF	20% 20% 20%	25V 25V 25V
C215 C216 C217	1-124-182-00 ELECT 1-136-155-00 FILM 1-136-169-00 FILM	1MF 0.015MF 0.22MF	20% 5% 5%	50V 50V 50V	C310 C311 C312	1-131-450-00 1-123-357-00 1-123-357-00	ELECT	1MF 22MF 22MF	20% 20% 20%	50V 50V 50V	C612 C613 C614	1-136-161-00 1-123-356-00 1-136-164-00	ELECT	0.047MF 10MF 0.082MF	5% 20% 5%	50V 16V 50V	C918 C919	1-123-338-00 1-162-211-31	CERAMIC	2200MF 33PF	20% 5%	25V 50V
C218 C219 C220	1-136-163-00 FILM 1-124-182-00 ELECT 1-136-162-00 FILM	0.068MF 1MF 0.056MF	5% 20% 5%	50V 50V 50V	C313 C314 C315	1-123-382-00 1-162-282-31 1-162-282-31	CERAMIC	3.3MF 100PF 100PF	20% 10% 10%	50V 50V 50V	C615 C616 C617	1-130-140-00 1-136-168-00 1-123-356-00	FILM	0.039MF 0.18MF 10MF	5% 5% 20%	100V 50V 16V	CN308	*1-560-062-00 *1-560-064-00 *1-560-338-00	PIN, CONNEC	TOR 6P		
C221 C222 C223	1-130-291-00 FILM 1-136-153-00 FILM 1-124-336-00 ELECT	0.0056MF 0.01MF 10MF	5% 5% 20%	100V 50V 100V	C316 C317 C318	1-123-330-00 1-123-330-00 1-123-330-00	ELECT ELECT	22MF 22MF 22MF	20% 20% 20%	25V 25V 25V	C618 C619 C620	1-161-328-00 1-102-851-00 1-102-851-00	CERAMIC	0.0047MF 15PF 15PF	30% 5%	50V 50V 50V	CN325	*1-560-063-00 *1-560-061-00 *1-560-062-00	PIN, CONNEC	TOR 3P		
C224 C225 C226	1-124-270-11 ELECT 1-124-332-00 ELECT 1-124-332-00 ELECT	0.47MF 2.2MF 2.2MF	20% 20% 20%	50V 100V 100V	C319 C320 C321	1-123-330-00 1-123-380-00 1-131-450-00	ELECT ELECT	22MF 1MF 1MF	20% 20% 20%	25V 50V 50V	C621 C622 C623	1-136-153-00 1-136-157-00 1-136-157-00	FILM FILM	0.01MF 0.022MF 0.022MF	5% 5% 5%	50V 50V 50V	CN329	*1-508-881-00 *1-508-878-00 *1-564-506-11	BASE POST 3	IP .		
C227 C228 C229	1-107-317-00 MICA 1-107-317-00 MICA 1-136-230-00 FILM	33PF 33PF 0.0022MF	5% 5% 3%	500V 500V 100V	C322 C323 C324	1-131-450-00 1-162-304-31 1-162-304-31	TANTALUM CERAMIC	1MF 0.0047MF 0.0047MF	20% 30% 30%	50V 16V 16V	C624 C701 C702	1-136-153-00 1-123-332-00 1-123-332-00	FILM ELECT	0.01MF 47MF 47MF	5% 20% 20%	50V 16V 16V	CN339	*1-564-510-11 *1-564-511-11 *1-564-513-11	PLUG, CONNE	CTOR 8P		
C230 C231 C232	1-136-230-00 FILM 1-130-287-00 FILM 1-136-173-00 FILM	0.0022MF 0.0039MF 0.47MF	3% 5% 5%	100V 100V 50V	C325 C326	1-131-450-00 1-131-450-00	TANTALUM TANTALUM	1MF 1MF	20% 20%	50V 50V	C703 C704	1-123-323-00 1-123-323-00	ELECT	470MF 470MF	20% 20%	16V 16V	CN342	*1-564-506-11 *1-564-509-11 *1-564-511-11	PLUG, CONNE	CTOR 6P		
C233 C234 C235	1-136-167-00 FILM 1-124-182-00 ELECT	0.15MF 1MF	5% 20%	50 V 50 V	C327 C328 C329	1-123-380-00 1-123-380-00 1-123-322-00	ELECT ELECT	1MF 1MF 330MF	20% 20% 20%	50V 50V 16V	C705 C706 C707	1-161-494-00 1-161-494-00 1-123-356-00	CERAMIC ELECT	0.022MF 0.022MF 10MF	30% 30% 20%	25V 25V 16V	CN345	*1-564-509-11 *1-564-507-21 *1-564-507-11	PLUG. CONNE	CTOR 4P		
C236 C237	1-136-155-00 FILM 1-136-169-00 FILM 1-136-163-00 FILM	0.015MF 0.22MF 0.068MF	5% 5% 5%	50V 50V	C330 C331 C332	1-123-322-00 1-131-450-00 1-131-450-00	TANTALUM TANTALUM	330MF 1MF 1MF	20% 20% 20%	16V 50V 50V	C708 C709 C710	1-161-329-00 1-136-164-00 1-136-160-00	FILM FILM	0.0068MF 0.082MF 0.039MF	30% 5% 5%	50V 50V	CN602	*1-560-066-00 *1-560-061-00 *1-560-339-00	PIN, CONNEC	CTOR 3P		
C238 C239 C240		1MF 0.056MF 0.0056MF	20% 5% 5%	50V 50V 100V	C333 C334 C335	1-123-356-00 1-123-380-00 1-123-356-00	ELECT	10MF 1MF 10MF	20% 20% 20%	25V 50V 25V	C711 C712 C713		FILM	0.082MF 0.1MF 2.2MF	5% 5% 20%	50V 50V 50V	CN802	*1-564-511-11 *1-560-338-00 *1-564-509-11	PIN, CONNEC	CTOR 7P		
C241 C242 C243	1-136-153-00 FILM 1-123-371-00 ELECT 1-123-371-00 ELECT	0.01MF 22MF 22MF	5% 20% 20%	63 V 63 V	C336 C337 C340	1-131-450-00 1-131-450-00 1-162-294-31	TANTALUM	1MF 1MF 0.001MF	20% 20% 10%	50V 50V 50V	C801 C802 C803	1-162-306-31 1-162-306-31 1-162-306-31	CERAMIC	0.01MF 0.01MF 0.01MF	20% 20% 20%	16V 16V 16V	CN804 CN805	*1-560-062-00 *1-560-062-00 *1-560-061-00	PIN, CONNEC	CTOR 4P		
C244 C245 C246	1-123-333-00 ELECT 1-107-317-00 MICA 1-107-309-00 MICA	100MF 33PF 100PF	20% 5% 5%	500V 500V	C341 C342 C343	1-162-294-31 1-162-294-31 1-162-294-31	CERAMIC	0.001MF 0.001MF 0.001MF	10% 10% 10%	50V 50V 50V	C804 C805 C806	1-162-306-31 1-162-306-31 1-162-306-31	CERAMIC	0.01MF 0.01MF 0.01MF	20% 20% 20%	16V 16V 16V	CN807 CN808	*1-560-061-00 *1-560-061-00 *1-560-060-00	PIN, CONNEC	CTOR 3P CTOR 3P		
C247 C248 C249	1-130-892-00 FILM 1-136-155-00 FILM 1-130-973-00 FILM	0.015MF 0.015MF 0.022MF	3% 5% 3%	100V 50V 100V	C344 C345 C346	1-162-294-31 1-123-382-00 1-123-382-00	CERAMIC ELECT	0.001MF 3.3MF 3.3MF	10% 20% 20%	50V 50V 50V	C807 C809 C810	1-162-306-31 1-162-211-31 1-162-211-31	CERAMIC	0.01MF 33PF 33PF	20% 5%	16V 50V 50V	CN810	*1-560-060-00 *1-560-060-00	PIN, CONNE	CTOR 2P		
C250 C251	1-136-157-00 FILM 1-130-972-51 FILM	0.022MF	5% 3%	50V 100V	C347 C348	1-123-356-00 1-162-294-31	CERAMIC	10MF 0.001MF	20%	50V 50V	C811	1-123-307-00 1-123-307-00	ELECT	100MF	5% 20% 20%	6.3V 6.3V	CN813 CN901	*1-560-061-00 *1-560-061-00	PIN, CONNE	CTOR 3P CTOR 3P		
C252 C253 C254	1-136-169-00 F1LM 1-107-309-00 MICA	0.0033MF 0.22MF 100PF	5% 5% 5%	100V 50V 500V	C349 C350 C351	1-162-294-31 1-136-157-00 1-136-157-00	FILM FILM	0.001MF 0.022MF	10% 5%	50V 50V	C813 C814 C815	1-162-284-31 1-162-284-31 1-162-294-31	CERAMIC CERAMIC	150PF 150PF 0.001MF	10% 10%	50V 50V	CP901	*1-560-060-00 <b>1</b> -161-744-00	CERAMIC	0.01 MF	400Y	
C255 C256	1-107-309-00 MICA 1-123-371-00 ELECT	100PF 22MF	20%	500V 63V	C352 C353	1-110-198-00 1-110-198-00	MYLAR	0.0018MF 0.0018MF	5% 5%	50V 50V	C901 C902	1-123-364-00 1-123-343-00	ELECT	1000MF 33MF	20% 20%	50V 35V	CT301	1-141-225-00 8-719-910-29				
C257 C258 C259	1-130-277-00 FILM 1-107-303-00 MICA 1-107-165-00 MICA	0.0015MF 130PF 56PF	5% 5% 5%	100V 100V 500V	C354 C355 C356	1-123-330-00 1-123-330-00 1-136-168-00	ELECT	22MF 22MF 0.18MF	20% 20% 5%	25V 25V 50V	C903 C904 C905	1-123-345-00 1-123-364-00 1-123-343-00	ELECT	100MF 1000MF 33MF	20% 20% 20%	35V 50V 35V	D02 D03 D04	8-719-107-94 8-719-107-94 8-719-910-64	DIODE 1SS2	02-1		
C261 C262 C263	1-124-185-00 ELECT 1-124-185-00 ELECT 1-136-173-00 FILM	4.7MF 4.7MF 0.47MF	20% 20% 5%	50V 50V 50V	C357 C601 C602	1-162-282-31 1-123-336-00 1-123-336-00	ELECT	100PF 470MF 470MF	10% 20% 20%	50V 25V 25V	C906 C907 C908	1-123-345-00 1-123-326-00 1-123-338-00	ELECT	100MF 3300MF 2200MF	20% 20% 20%	35V 16V 25V	DO 5 DO 6	8-719-901-61 8-719-901-61	DIODE HZ16	-1L -1L		
				59	9—						t I	The components by shading and critical for sa Replace only wi number specifie	mark <u>A</u> are fety. th part			—60	D101 D102 D103	8-719-815-56 8-719-815-55 8-719-815-55	DIODE 1S15	55		

	ELECTRIC	CAL PARTS		1		ELECTRIC	CAL PARTS	
Ref.No.	Part No.	Description			Ref.No.	Part No.	Description	
D104 D105 D106	8-719-815-55	DIODE 151555 DIODE 151555 DIODE 151555		1	D344 D345 D601	8-719-107-94	DIODE 1SS202-1 DIODE 1SS202-1 DIODE HZ6B1L	
D107 D108 D109	8-719-815-55 8-719-107-94 8-719-107-94	DIODE 1S1555 DIODE 1SS202-1 DIODE 1SS202-1			D602 D701 D702	8-719-910-64	DIODE HZ681L DIODE HZ11B1L DIODE HZ11B1L	
D201 D202 D203	8-719-815-55	DIODE 1S1555 DIODE 1S1555 DIODE 1S1555	19 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		D703 D704 D705	8-719-107-94	DIODE 15S202-1 DIODE 15S202-1 DIODE 15S202-1	
D204 D205 D206		DIODE 151555 DIODE 151555 DIODE 151555	e e e e e e e e		D706 D707 D708	8-719-107-94	D100E 1SS202-1 D100E 1SS202-1 D100E 1SS202-1	
D207 D208 D209	8-719-107-94	DIODE 1S1555 DIODE 1SS202-1 DIODE 1SS202-1			D801 D802 D803	8-719-200-23 8-719-200-23 8-719-200-23	DIODE 11E2	
D301 D302 D303	8-719-910-64 8-719-224-12		A BOOK TO		D804 D805 D806	8-719-200-23 8-719-200-23 8-719-107-94		
D304 D305 D306	8-719-910-64 8-719-107-94 8-719-107-94	DIODE HZ6B1L DIODE 1SS202-1 DIODE 1SS202-1		·	D807 D808 D809	8-719-107-94	DIODE 1SS202-1 DIODE 1SS202-1 DIODE 1SS202-1	
D307 D308 D309	8-719-910-64 8-719-910-64	DIODE HZ11B1L DIODE HZ11B1L DIODE 1SS202-1			D851 D852 D853	8-719-952-52	DIODE PY5525S DIODE PG5525SX DIODE PY5525S	
0310 0311 0313	8-719-107-94	DIODE 1SS202-1 DIODE 1SS202-1 DIODE HZ12A1L			D854 D855 D901	8-719-952-51	DIODE BR5525S DIODE AA5525S DIODE EQB01-06	
D314 D315 D316	8-719-107-94	DIODE HZ12A1L DIODE 1SS2O2-1 DIODE 1SS2O2-1			D902 D903 D904	8-719-500-34 8-719-501-34 8-719-200-62	DIODE S3YC4OR	
D317 D318 D319	8-719-107-94	DIODE 1SS202-1 DIODE 1SS202-1 DIODE 1SS202-1			D905 D906 D907		DIODE S3VC4OR DIODE 11E2	
D320 D321 D322	8-719-910-64	DIODE 1SS202-1 DIODE HZ12A1L DIODE 1SS202-1			D910 D911 D912	8-719-230-02 8-719-230-02 8-719-230-02	DIODE 300F2	
D323 D324 D325	8-719-107-94	DIODE 1SS202-1 DIODE 1SS202-1 DIODE 1SS202-1	4.		D913 D914 D915	8-719-230-02 8-719-210-12 8-719-210-12	DIODE 100F2	
D326 D327 D328	8-719-107-94 8-719-107-94 8-719-910-02	DIODE 1SS202-1 DIODE 1SS202-1 DIODE HZ20-2L			D916 D917 D918	8-719-210-12 8-719-210-12 8-719-992-71		
D329 D330 D331	8-719-910-02 8-719-910-02 8-719-910-02	DIODE HZ20-2L DIODE HZ20-2L DIODE HZ20-2L	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		D920	8-719-910-64	DIODE HZ33-1L DIODE HZ6B1L DIODE 1SS202-1	
D332 D333 D334		DIODE HZ12AlL DIODE 1SS202-1 DIODE 1SS202-1		21 21 24			AND THE RECOGNICATION	13.
D335 D336 D337	8-719-107-94 8-719-107-94 8-719-107-94				H1002 H1003	8-719-800-17	DIODE THS102A DIODE THS102A DIODE THS102A DIODE THS102A	
D338	8-719-107-94 8-719-107-94	DIODE 1SS202-1 DIODE 1SS202-1			HE .	1-543-358-11	HEAD, MAGNETIC (ERASE)	
D340	8-719-107-94	DIODE 155202-1			HRP	8-825-500-32	HEAD, REC/PB (RPA230-3602A)	
D341 D342 D343	8-719-107-94	DIODE 1SS202-1 DIODE 1SS202-1 DIODE HZ6B1L			IC01 IC02 IC03		IC UPD550C-047 IC MSL9357RS IC MSL9358RS	0000000
							The components identified	d

	ELECTRIC	CAL PARTS
Ref.No.	Part No.	Description
IC101	8-759-602-89	IC M5240PR
IC102	8-759-603-03	IC M5240P
IC103	8-759-145-58	IC UPC4558C
IC201	8-759-602-89	IC M5240PR
IC202	8-759-603-03	IC M5240P
IC203	8-759-145-58	IC UPC4558C
1C301 1C302 1C303	8-752-018-80 8-759-145-58 8-759-900-72	IC CX20188 IC UPC4558C IC NE5532P
IC304	8-759-602-83	IC M5238P
IC305	8-752-018-80	IC CX20188
IC306	8-759-745-60	IC NJM4560D
1C307	8-759-745-60	IC NJM4560D
1C308	8-759-602-83	IC M5238P
1C309	8-759-745-60	IC NJM4560D
IC601	8-759-102-17	IC CX10031A
IC602	8-759-958-14	IC MSM58141RS
IC603	8-759-145-58	IC UPC4558C
IC604	8-759-145-58	IC UPC4558C
IC701	8-759-102-17	IC CX10031A
IC801	8-759-922-90	IC MB8841H-1443K
IC901 IC1001	8-759-602-47 8-759-170-05 8-759-400-90 8-759-400-90	IC M50761-417P IC UPC78M05H IC DN6838A IC DN6838A
J301	1-507-726-00	JACK, PIN 2P
J302	1-507-726-00	JACK, PIN 2P
J303	1-507-726-00	JACK, PIN 2P
J304	1-507-796-21	JACK
L01	1-408-096-00	MICRO INDUCTOR 470UH
L101	1-407-240-00	MICRO INDUCTOR 22MMH
L102	1-408-253-00	MICRO INDUCTOR 4.7MMH
L103	1-408-250-00	MICRO INDUCTOR 2.7MMH
L104	1-408-249-00	MICRO INDUCTOR 2.2MMH
L105	1-408-259-00	MICRO INDUCTOR 15MMH
L201	1-407-240-00	MICRO INDUCTOR 22MMH
L202	1-408-253-00	MICRO INDUCTOR 4.7MMH
L203	1-408-250-00	MICRO INDUCTOR 2.7MMH
L204	1-408-249-00	MICRO INDUCTOR 2.2MMH
L205	1-408-259-00	MICRO INDUCTOR 15MMH
L301	1-408-096-00	MICRO INDUCTOR 470UH
L302	1-408-096-00	MICRO INDUCTOR 470UH
L303	1-408-096-00	MICRO INDUCTOR 470UH
	1-231-388-00 1-231-388-00	FILTER, LOWPASS FILTER, LOWPASS
0SC301	1-464-328-11	OSCILLATION UNIT, BIAS
PL301	1-518-386-00	LAMP, PILOT
PL302	1-518-386-00	LAMP, PILOT
PL1001	1-518-306-00	LAMP, PILOT
PM1	1-454-270-00	SOLENOID, PLUNGER
PM2	1-454-271-00	SOLENOID, PLUNGER
PM3	1-454-345-00	SOLENOID, PLUNGER
	ENEW EL	TRANSFORMER, DONER
Q01	8-729-902-11	TRANSISTOR 2SC2021
Q02	8-729-902-11	TRANSISTOR 2SC2021
Q03	8-729-101-31	TRANSISTOR N13T1

Ε	LECTRICAL	PARTS

Ref.No.	Part No.	Descriptio	<u>n</u>
Q04	8-729-902-11	TRANSISTOR	2SA937
Q05	8-729-993-72	TRANSISTOR	
Q06	8-729-902-11	TRANSISTOR	
007	8-729-993-72	TRANSISTOR	
0101	8-729-107-99	TRANSISTOR	
0102	8-729-811-22	TRANSISTOR	
0103	8-729-178-54	TRANSISTOR	DTC144ES
0104	8-729-900-89	TRANSISTOR	
0201	8-729-128-54	TRANSISTOR	
0202	8-729-811-22	TRANSISTOR	
0203	8-729-178-54	TRANSISTOR	
0204	8-729-900-89	TRANSISTOR	
0301	8-729-113-82	TRANSISTOR	2SC2676
0302	8-729-167-62	TRANSISTOR	
0303	8-729-167-62	TRANSISTOR	
Q304	8-729-127-53	TRANSISTOR	2SC2676
Q305	8-729-167-62	TRANSISTOR	
Q306	8-729-113-82	TRANSISTOR	
Q307	8-729-113-82	TRANSISTOR	2SA985-P
Q308	8-729-118-53	TRANSISTOR	
Q309	8-729-900-89	TRANSISTOR	
Q310	8-729-117-54	TRANSISTOR	2SC2603F
Q311	8-729-606-33	TRANSISTOR	
Q312	8-729-281-53	TRANSISTOR	
Q313	8-729-281-53	TRANSISTOR	
Q314	8-729-177-43	TRANSISTOR	
Q315	8-729-103-43	TRANSISTOR	
0316	8-729-900-80	TRANSISTOR	2SD101 2-F2
0317	8-729-811-22	TRANSISTOR	
0318	8-729-900-89	TRANSISTOR	
0319	8-729-900-89	TRANSISTOR	DTC144ES
0320	8-729-900-89	TRANSISTOR	
0321	8-729-900-36	TRANSISTOR	
Q322	8-729-606-33	TRANSISTOR	DTC114 ES
Q323	8-729-900-89	TRANSISTOR	
Q324	8-729-900-89	TRANSISTOR	
Q325	8-729-900-89	TRANSISTOR	DTC144 ES
Q326	8-729-900-89	TRANSISTOR	
Q327	8-729-117-54	TRANSISTOR	
Q328	8-729-900-89	TRANSISTOR	2SA117 5
Q329	8-729-117-54	TRANSISTOR	
Q330	8-729-178-54	TRANSISTOR	
Q331	8-729-178-54	TRANSISTOR	2SD809
Q601	8-729-180-93	TRANSISTOR	
Q602	8-729-173-13	TRANSISTOR	
0603	8-729-606-33	TRANSISTOR	2SA117 5
0604	8-729-117-54	TRANSISTOR	
0605	8-729-606-33	TRANSISTOR	
0606	8-729-117-54	TRANSISTOR	2SC26O3F
0607	8-729-606-33	TRANSISTOR	
0701	8-729-180-93	TRANSISTOR	
0702	8-729-173-13	TRANSISTOR	2SC260 3F
0703	8-729-606-33	TRANSISTOR	
0704	8-729-117-54	TRANSISTOR	
0705 0706 0707	8-729-900-80 8-729-900-61 8-729-900-80	TRANSISTOR TRANSISTOR TRANSISTOR	DTA114 ES DTC114 ES

The components identified by shading and mark ⚠are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS	ELECTRICAL PARTS	ELECTRICAL PARTS	ELECTRICAL PARTS
Ref.No. Part No. Description	Ref.No. Part No. Description	Ref.No. Part No. Description	Ref.No. Part No. Description
Q708 8-729-900-80 TRANSISTOR 2SD1012	R13 1-249-433-11 CARBON 22K 5% 1/6W	R148 1-247-711-11 CARBON 680 1/4W	R212 1-249-465-11 CARBON 47K 1/4W
Q709 8-729-900-80 TRANSISTOR DTC114ES	R14 1-249-425-11 CARBON 4.7K 5% 1/6W	R149 1-247-154-00 CARBON 9.1K 1/4W	R213 1-247-749-11 CARBON 56O 1/2W
Q710 8-729-900-80 TRANSISTOR DTC114ES	R15 1-249-429-11 CARBON 10K 5% 1/6W	R150 1-249-465-11 CARBON 47K 1/4W	R214 1-247-146-OO CARBON 4.3K 1/4W
Q801 8-729-802-22 TRANSISTOR 2SB1014	R16 1-249-433-11 CARBON 22K 5% 1/6W	R151 1-247-710-11 CARBON 560 1/4W	R215 1-247-142-00 CARBON 3K 1/4W
Q802 8-729-802-22 TRANSISTOR 2SB1014	R17 1-249-441-11 CARBON 100K 5% 1/6W	R152 1-247-721-11 CARBON 4.7K 1/4W	R216 1-246-545-00 CARBON 1M 1/4W
Q803 8-729-900-80 TRANSISTOR DTC114ES	R18 1-247-875-00 CARBON 68K 5% 1/6W	R153 1-249-460-11 CARBON 15K 1/4W	R217 1-247-710-11 CARBON 560 1/4W
Q804 8-729-900-80 TRANSISTOR DTC114ES	R19 1-247-109-00 CARBON 120 5% 1/4W	R154 1-247-719-11 CARBON 3.3K 1/4W	R218 1-247-163-00 CARBON 22K 1/4W
Q805 8-729-802-34 TRANSISTOR 2SD1388	R20 1-247-109-00 CARBON 120 5% 1/4W	R155 1-249-417-11 CARBON 1K 5% 1/6W	R219 1-247-152-00 CARBON 7.5K 1/4W
Q806 8-729-802-34 TRANSISTOR 2SD1388	R21 1-247-875-00 CARBON 68K 5% 1/6W	R156 1-247-266-00 CARBON 12K 1/2W	R220 1-247-711-11 CARBON 680 1/4W
Q807 8-729-802-34 TRANSISTOR 2SD1388	R22 1-247-875-00 CARBON 68K 5% 1/6W	R157 1-247-250-00 CARBON 2.7K 1/2W	R221 1-247-154-00 CARBON 9.1K 1/4W R222 1-247-264-00 CARBON 10K 1/2W R223 1-249-465-11 CARBON 47K 1/4W
Q808 8-729-900-61 TRANSISTOR DTA114ES	R23 1-247-875-00 CARBON 68K 5% 1/6W	R158 1-247-258-00 CARBON 5.6K 1/2W	
Q809 8-729-900-61 TRANSISTOR DTA114ES	R101 1-249-713-00 CARBON 47K 1/2W	R160 1-247-703-11 CARBON 180 1/4W	
Q810 8-729-900-61 TRANSISTOR DTA114ES	R102 1-247-220-00 CARBON 150 1/2W	R161 1-249-459-11 CARBON 12K 1/4W	R224 1-247-749-11 CARBON 560 1/2W
Q811 8-729-900-61 TRANSISTOR DTA114ES	R103 1-244-922-00 CARBON 110K 1/2W	R162 1-249-530-00 CARBON 120 1/4W	R225 1-249-465-11 CARBON 47K 1/4W
Q812 8-729-900-61 TRANSISTOR DTA114ES	R104 1-247-255-00 CARBON 4.3K 1/2W	R163 1-247-721-11 CARBON 4.7K 1/4W	R226 1-247-163-00 CARBON 22K 1/4W
Q813 8-729-900-61 TRANSISTOR DTA114ES	R106 1-247-700-11 CARBON 100 1/4W	R164 1-247-145-00 CARBON 3.9K 1/4W	R227 1-247-163-00 CARBON 22K 1/4W
Q814 8-729-900-61 TRANSISTOR DTA114ES	R107 1-247-137-00 CARBON 1.8K 1/4W	R165 1-249-530-00 CARBON 120 1/4W	R228 1-249-469-11 CARBON 100K 1/4W
Q815 8-729-900-61 TRANSISTOR DTA114ES	R108 1-247-138-00 CARBON 2K 1/4W	R166 1-247-719-11 CARBON 3.3K 1/4W	R229 1-247-704-11 CARBON 220 1/4W
Q816 8-729-900-61 TRANSISTOR DTA114ES	R109 1-249-469-11 CARBON 100K 1/4W	R167 1-247-719-11 CARBON 3.3K 1/4W	R230 1-247-749-11 CARBON 560 1/2W
Q817 8-729-900-61 TRANSISTOR DTA114ES	R110 1-249-417-11 CARBON 1K 5% 1/6W	R168 1-247-254-00 CARBON 3.9K 1/2W	R231 1-247-749-11 CARBON 560 1/2W
Q818 8-729-900-61 TRANSISTOR DTA114ES	R111 1-247-717-11 CARBON 2.2K 1/4W	R169 1-247-274-00 CARBON 27K 1/2W	R232 1-247-274-00 CARBON 27K 1/2W
Q819 8-729-900-61 TRANSISTOR DTA114ES	R112 1-249-465-11 CARBON 47K 1/4W	R170 1-249-459-11 CARBON 12K 1/4W	R233 1-247-152-00 CARBON 8.2K 1/4W
Q820 8-729-900-80 TRANSISTOR DTC114ES	R113 1-247-749-11 CARBON 560 1/2W	R171 1-247-163-00 CARBON 22K 1/4W	R234 1-247-151-00 CARBON 6.8K 1/4W
Q821 8-729-900-80 TRANSISTOR DTC114ES	R114 1-247-146-00 CARBON 4.3K 1/4W	R172 1-247-250-00 CARBON 2.7K 1/2W	R235 1-247-145-00 CARBON 3.9K 1/4W
Q822 8-729-900-80 TRANSISTOR DTC114ES	R115 1-247-142-00 CARBON 3K 1/4W	R175 1-249-415-11 CARBON 680 5% 1/6W	R236 1-247-719-11 CARBON 3.3K 1/4W
Q823 8-729-900-80 TRANSISTOR DTC114ES	R116 1-246-545-00 CARBON 1M 1/4W	R176 1-249-433-11 CARBON 22K 5% 1/6W	R237 1-247-151-00 CARBON 6.8K 1/4W
Q824 8-729-900-80 TRANSISTOR DTC114ES	R117 1-247-710-11 CARBON 560 1/4W	R177 1-247-839-00 CARBON 2.2K 5% 1/6W	R238 1-249-469-11 CARBON 100K 1/4W
Q825 8-729-900-80 TRANSISTOR DTC114ES	R118 1-247-163-00 CARBON 22K 1/4W	R178 1-247-819-00 CARBON 330 5% 1/6W	R239 1-249-469-11 CARBON 100K 1/4W
Q826 8-729-900-80 TRANSISTOR DTC114ES	R119 1-247-152-00 CARBON 7.5K 1/4W	R179 1-247-839-00 CARBON 2.2K 5% 1/6W	R240 1-247-232-00 CARBON 470 1/2W
Q827 8-729-900-80 TRANSISTOR DTC114ES	R120 1-247-711-11 CARBON 680 1/4W	R180 1-247-853-00 CARBON 8.2K 5% 1/6W	R241 1-247-264-00 CARBON 10K 1/2W
Q828 8-729-900-61 TRANSISTOR DTA114ES	R121 1-247-154-00 CARBON 9.1K 1/4W	R181 1-249-425-11 CARBON 4.7K 5% 1/6W	R242 1-247-146-00 CARBON 4.3K 1/4W
Q829 8-729-900-61 TRANSISTOR DTA114ES	R122 1-247-264-00 CARBON 10K 1/2W	R182 1-247-883-00 CARBON 150K 5% 1/6W	R243 1-247-142-00 CARBON 3K 1/4W
Q830 8-729-900-61 TRANSISTOR DTA114ES	R123 1-249-465-11 CARBON 47K 1/4W	R183 1-249-422-11 CARBON 2.7K 5% 1/6W	R244 1-246-545-00 CARBON 1M 1/4W
0831 8-729-900-89 TRANSISTOR DTC144ES	R124 1-247-749-11 CARBON 560 1/2W	R184 1-247-823-00 CARBON 470 5% 1/6W	R245 1-247-710-11 CARBON 560 1/4W
0832 8-729-802-22 TRANSISTOR 2SB1014	R125 1-249-465-11 CARBON 47K 1/4W	R185 1-247-826-00 CARBON 620 5% 1/6W	R246 1-247-163-00 CARBON 22K 1/4W
0833 8-729-900-80 TRANSISTOR DTC114ES	R126 1-247-163-00 CARBON 22K 1/4W	R186 1-247-817-00 CARBON 270 5% 1/6W	R247 1-247-152-00 CARBON 7.5K 1/4W
Q834 8-729-900-61 TRANSISTOR DTA114ES	R127 1-247-163-00 CARBON 22K 1/4W	R187 1-247-823-00 CARBON 470 5% 1/6W	R248 1-247-711-11 CARBON 680 1/4W
Q835 8-729-900-61 TRANSISTOR DTA114ES	R128 1-249-469-11 CARBON 100K 1/4W	R188 1-249-417-11 CARBON 1K 5% 1/6W	R249 1-247-154-00 CARBON 9.1K 1/4W
Q901 8-729-606-33 TRANSISTOR 2SC2603F	R129 1-247-704-11 CARBON 220 1/4W	R189 1-247-893-00 CARBON 390K 5% 1/6W	R250 1-249-465-11 CARBON 47K 1/4W
Q902 8-729-400-81 TRANSISTOR 2SD1266-Q	R130 1-247-749-11 CARBON 560 1/2W	R190 1-247-839-00 CARBON 2.2K 5% 1/6W	R251 1-247-710-11 CARBON 560 1/4W
Q903 8-729-606-33 TRANSISTOR 2SC2603F	R131 1-247-749-11 CARBON 560 1/2W	R191 1-249-441-11 CARBON 100K 5% 1/6W	R252 1-247-721-11 CARBON 4.7K 1/4W
Q904 8-729-400-81 TRANSISTOR 2SD1266-Q	R132 1-247-274-00 CARBON 27K 1/2W	R192 1-249-429-11 CARBON 10K 5% 1/6W	R253 1-249-460-11 CARBON 15K 1/4W
Q905 8-729-606-33 TRANSISTOR 2SC2603F	R133 1-247-152-00 CARBON 8.2K 1/4W	R193 1-249-441-11 CARBON 100K 5% 1/6W	R254 1-247-719-11 CARBON 3.3K 1/4W
Q906 8-729-606-33 TRANSISTOR 2SC2603F	R134 1-247-151-00 CARBON 6.8K 1/4W	R194 1-249-425-11 CARBON 4.7K 5% 1/6W	R255 1-249-417-11 CARBON 1K 5% 1/6W
Q907 8-729-400-81 TRANSISTOR 2SD1266-Q	R135 1-247-145-00 CARBON 3.9K 1/4W	R195 1-249-425-11 CARBON 4.7K 5% 1/6W	R256 1-247-266-00 CARBON 12K 1/2W
RO1 1-249-433-11 CARBON 22K 5% 1/6W	R136 1-247-719-11 CARBON 3.3K 1/4W	R196 1-247-845-00 CARBON 3.9K 5% 1/6W	R257 1-247-250-00 CARBON 2.7K 1/2W
RO2 1-249-433-11 CARBON 22K 5% 1/6W	R137 1-247-151-00 CARBON 6.8K 1/4W	R197 1-249-417-11 CARBON 1K 5% 1/6W	R258 1-247-258-00 CARBON 5.6K 1/2W
RO3 1-249-437-11 CARBON 47K 5% 1/6W	R138 1-249-469-11 CARBON 100K 1/4W	R201 1-249-713-00 CARBON 47K 1/2W	R260 1-247-703-11 CARBON 180 1/4W
RO4 1-249-433-11 CARBON 22K 5% 1/6W RO5 1-247-881-00 CARBON 120K 5% 1/6W RO6 1-247-845-00 CARBON 3.9K 5% 1/6W	R139 1-249-469-11 CARBON 100K 1/4W	R202 1-247-220-00 CARBON 150 1/2W	R261 1-249-459-11 CARBON 12K 1/4W
	R140 1-247-232-00 CARBON 470 1/2W	R203 1-244-922-00 CARBON 110K 1/2W	R262 1-249-530-00 CARBON 120 1/4W
	R141 1-247-264-00 CARBON 10K 1/2W	R204 1-247-255-00 CARBON 4.3K 1/2W	R263 1-247-721-11 CARBON 4.7K 1/4W
RO7 1-247-815-00 CARBON 220 5% 1/6W	R142 1-247-146-00 CARBON 4.3K 1/4W	R206 1-247-700-11 CARBON 100 1/4W	R264 1-247-145-00 CARBON 3.9K 1/4W
RO8 1-249-429-11 CARBON 10K 5% 1/6W	R143 1-247-142-00 CARBON 3K 1/4W	R207 1-247-137-00 CARBON 1.8K 1/4W	R265 1-249-530-00 CARBON 120 1/4W
RO9 1-247-857-00 CARBON 12K 5% 1/6W	R144 1-246-545-00 CARBON 1M 1/4W	R208 1-247-138-00 CARBON 2K 1/4W	R266 1-247-719-11 CARBON 3.3K 1/4W
R10 1-249-441-11 CARBON 100K 5% 1/6W	R145 1-247-710-11 CARBON 560 1/4W	R209 1-249-469-11 CARBON 100K 1/4W R210 1-249-417-11 CARBON 1K 5% 1/6W R211 1-247-717-11 CARBON 2.2K 1/4W	R267 1-247-719-11 CARBON 3.3K 1/4W
R11 1-249-425-11 CARBON 4.7K 5% 1/6W	R146 1-247-163-00 CARBON 22K 1/4W		R268 1-247-254-00 CARBON 3.9K 1/2W
R12 1-249-429-11 CARBON 10K 5% 1/6W	R147 1-247-152-00 CARBON 7.5K 1/4W		R269 1-247-274-00 CARBON 27K 1/2W

	ELECTRIC	AL PARTS					ELECTRIC	AL PARTS			
Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
R270	1-249-459-11	CARBON	12K		1/4W	R333	1-247-885-00	CARBON	180K	5%	1/6W
R271	1-247-163-00	CARBON	22K		1/4W	R334	1-249-429-11	CARBON	10K	5%	1/6W
R272	1-247-250-00	CARBON	2.7K		1/2W	R335	1-249-429-11	CARBON	10K	5%	1/6W
R275	1-249-415-11	CARBON	680	5%	1/6W	R336	1-249-433-11	CARBON	22K	5%	1/6W
R276	1-249-433-11	CARBON	22K	5%	1/6W	R337	1-249-429-11	CARBON	10K	5%	1/6W
R277	1-247-839-00	CARBON	2.2K	5%	1/6W	R338	1-249-433-11	CARBON	22K	5%	1/6W
R278	1-247-819-00	CARBON	330	5%	1/6W	R339	1-249-437-11	CARBON	47K	5%	1/6W
R279	1-247-839-00	CARBON	2.2K	5%	1/6W	R340	1-249-437-11	CARBON	47K	5%	1/6W
R280	1-247-853-00	CARBON	8.2K	5%	1/6W	R341	1-214-780-00	METAL	130K	1%	1/4W
R281 R282 R283	1-249-425-11 1-247-883-00 1-249-422-11	CARBON CARBON CARBON	4.7K 150K 2.7K	5% 5% 5%	1/6W 1/6W 1/6W	R342 R343 R344	1-249-437-11 1-247-849-00 1-247-700-11	CARBON CARBON CARBON	47K 5.6K 100	5% 5%	1/6W 1/6W 1/4W
R284 R285 R286	1-247-823-00 1-247-826-00 1-247-817-00	CARBON CARBON CARBON	470 620 270	5% 5% 5%	1/6W 1/6W 1/6W	R345 R346 R351	1-247-700-11 1-247-839-00 1-249-417-11	CARBON CARBON CARBON	100 2.2K 1K	5% 5%	1/4W 1/6W 1/6W
R287	1-247-823-00	CARBON	470	5%	1/6W	R352	1-249-417-11	CARBON	1K	5%	1/6W
R288	1-249-417-11	CARBON	1K	5%	1/6W	R353	1-249-417-11	CARBON	1K	5%	1/6W
R289	1-247-893-00	CARBON	390K	5%	1/6W	R354	1-249-417-11	CARBON	1K	5%	1/6W
R290	1-247-839-00	CARBON	2.2K	5%	1/6W	R355	1-249-435-11	CARBON	33K	5%	1/6W
R291	1-249-441-11	CARBON	100K	5%	1/6W	R356	1-249-435-11		33K	5%	1/6W
R292	1-249-429-11	CARBON	10K	5%	1/6W	R357	1-249-441-11		100K	5%	1/6W
R293	1-249-441-11	CARBON	100K	5%	1/6W	R358	1-249-441-11	CARBON	100K	5%	1/6W
R294	1-249-425-11	CARBON	4.7K	5%	1/6W	R359	1-249-429-11		10K	5%	1/6W
R295	1-249-425-11	CARBON	4.7K	5%	1/6W	R360	1-249-433-11		22K	5%	1/6W
R296 R297 R301	1-247-845-00 1-249-417-11 1-247-704-11	CARBON CARBON CARBON	3.9K 1K 220	5% 5%	1/6W 1/6W 1/4W	R361 R362 R363	1-249-433-11 1-247-875-00 1-249-433-11	CARBON CARBON CARBON	22K 68K 22K	5% 5% 5%	1/6W 1/6W 1/6W
R302 R303 R304	1-249-465-11 1-247-133-00 1-247-719-11	CARBON CARBON CARBON	47K 1.2K 3.3K		1/4W 1/4W 1/4W	R364 R365 R366	1-249-433-11 1-247-875-00 1-247-875-00	CARBON	22K 68K 68K	5% 5% 5%	1/6W 1/6W 1/6W
R305 R306 R307	1-214-858-00 1-214-864-00 1-247-704-11	METAL METAL CARBON	560 1K 220	1% 1%	1/2W 1/2W 1/4W	R367 R368 R369	1-249-433-11 1-249-437-11 1-249-433-11	CARBON CARBON CARBON	22K 47K 22K	5% 5% 5%	1/6W 1/6W 1/6W
R308 R309 R310	1-249-465-11 1-247-133-00 1-247-719-11	CARBON CARBON CARBON	47K 1.2K 3.3K		1/4W 1/4W 1/4W	R370 R371 R372	1-249-432-11 1-249-432-11 1-247-791-00	CARBON	18K 18K 22	5% 5% 5%	1/6W 1/6W 1/6W
R311	1-214-858-00	METAL	560	1%	1/2W	R373	1-247-811-00	CARBON	150	5%	1/6W
R312	1-214-864-00	METAL	1K	1%	1/2W	R374	1-249-433-11		22K	5%	1/6W
R313	1-249-432-11	CARBON	18K	5%	1/6W	R375	1-249-437-11		47K	5%	1/6W
R314	1-249-437-11	CARBON	47K	5%	1/6W	R376	1-249-433-11	CARBON	22K	5%	1/6W
R315	1-214-751-00	METAL	8.2K	1%	1/4W	R377	1-247-856-00	CARBON	11K	5%	1/6W
R316	1-214-743-00	METAL	3.9K	1%	1/4W	R378	1-247-856-00	CARBON	11K	5%	1/6W
R317	1-214-735-00	METAL	1.8K	1%	1/4W	R379	1-247-791-00	CARBON	22	5%	1/6W
R318	1-214-747-00	METAL	5.6K	1%	1/4W	R380	1-247-811-00	CARBON	150	5%	1/6W
R319	1-247-853-00	CARBON	8.2K	5%	1/6W	R381	1-249-441-11	CARBON	100K	5%	1/6W
R320 R321 R322	1-247-849-00 1-247-849-00 1-249-429-11	CARBON CARBON CARBON	5.6K 5.6K 10K	5% 5% 5%	1/6W 1/6W 1/6W	R382 R383 R384	1-249-441-11 1-249-405-11 1-247-839-00	CARBON	100K 100 2.2K	5%	1/6W 1/6W 1/6W
R323	1-249-433-11	CARBON	22K	5%	1/6W	R385	1-247-845-00	CARBON	3.9K		1/6W
R324	1-247-895-00	CARBON	470K	5%	1/6W	R386	1-247-889-00	CARBON	270K		1/6W
R326	1-249-433-11	CARBON	22K	5%	1/6W	R601	1-249-437-11	CARBON	47K		1/6W
R327	1-249-433-11	CARBON	22K	5%	1/6W	R602	1-249-437-11	CARBON	47K		1/6W
R328	1-214-780-00	METAL	130K	1%	1/4W	R603	1-249-423-11	CARBON	3.3K		1/6W
R329	1-249-437-11	CARBON	47K	5%	1/6W	R604	1-249-423-11	CARBON	3.3K		1/6W
R330	1-249-437-11	CARBON	47K	5%	1/6W	R605	1-249-415-11	CARBON	680	5%	1/6W
R331	1-249-437-11	CARBON	47K	5%	1/6W	R606	1-249-415-11	CARBON	680	5%	1/6W
R332	1-249-437-11	CARBON	47K	5%	1/6W	R607	1-249-417-11	CARBON	1K	5%	1/6W

	ELECTRIC	AL PARTS					ELECTRIC	AL PARTS			
Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
R608 R609 R613	1-249-417-11 1-247-839-00 1-249-440-11	CARBON CARBON CARBON	1K 2.2K 82K		1/6W 1/6W 1/6W	R810 R811 R812	1-249-433-11 1-249-433-11 1-249-433-11	CARBON	22K 22K 22K	5% 5% 5%	1/6W 1/6W 1/6W
R614	1-249-417-11	CARBON	1K	5%	1/6W	R813	1-249-417-11	CARBON	1K	5%	1/6W
R615	1-249-417-11	CARBON	1K	5%	1/6W	R814	1-249-417-11	CARBON	1K	5%	1/6W
R616	1-249-429-11	CARBON	10K	5%	1/6W	R815	1-249-417-11	CARBON	1K	5%	1/6W
R617	1-249-429-11	CARBON	10K	5%	1/6W	R816	1-249-417-11	CARBON	1K	5%	1/6W
R618	1-249-429-11	CARBON	10K	5%	1/6W	R817	1-249-417-11	CARBON	1K	5%	1/6W
R619	1-249-441-11	CARBON	100K	5%	1/6W	R818	1-249-417-11	CARBON	1K	5%	1/6W
R620	1-249-437-11	CARBON	47K	5%	1/6W	R819	1-249-417-11	CARBON	1K	5%	1/6W
R621	1-247-895-00	CARBON	470K	5%	1/6W	R610	1-247-839-00	CARBON	2.2K	5%	1/6W
R622	1-247-899-00	CARBON	680K	5%	1/6W	R611	1-247-771-00	CARBON	3.3	5%	1/6W
R623	1-214-765-00	METAL	33K	1%	1/4W	R612	1-247-771-00	CARBON	3.3	5%	1/6W
R624	1-249-440-11	CARBON	82K	5%	1/6W	R820	1-249-417-11	CARBON	1K	5%	1/6W
R625	1-249-429-11	CARBON	10K	5%	1/6W	R821	1-249-417-11	CARBON	1K	5%	1/6W
R626	1-249-429-11	CARBON	10K	5%	1/6W	R822	1-249-417-11	CARBON	1K	5%	1/6W
R627	1-249-422-11	CARBON	2.7K	5%	1/6W	R823	1-249-417-11	CARBON	1K	5%	1/6W
R628	1-247-850-00	CARBON	6.2K	5%	1/6W	R824	1-249-417-11	CARBON	1K	5%	1/6W
R629	1-249-425-11	CARBON	4.7K	5%	1/6W	R825	1-249-417-11	CARBON	1K	5%	1/6W
R630	1-247-851-00	CARBON	6.8K	5%	1/6W	R826	1-249-417-11	CARBON	1K	5%	1/6W
R631	1-247-903-00	CARBON	1M	5%	1/6W	R827	1-249-422-11	CARBON	2.7K	5%	1/6W
R632	1-249-441-11	CARBON	100K	5%	1/6W	R828	1-247-903-00	CARBON	1M	5%	1/6W
R633	1-247-850-00	CARBON	6.2K	5%	1/6W	R829	1-247-700-11	CARBON	100	5%	1/4W
R634	1-247-857-00	CARBON	12K	5%	1/6W	R830	1-247-688-11	CARBON	10	5%	1/4W
R635	1-249-417-11	CARBON	1K	5%	1/6W	R831	1-249-432-11	CARBON	18K	5%	1/6W
R636	1-247-873-00	CARBON	56K	5%	1/6W	R832	1-247-857-00	CARBON	12K	5%	1/6W
R637	1-249-417-11	CARBON	1K	5%	1/6W	R833	1-249-433-11	CARBON	22K	5%	1/6W
R638	1-249-417-11	CARBON	1K	5%	1/6W	R834	1-249-441-11	CARBON	100K	5%	1/6W
R639	1-249-423-11	CARBON	3.3K	5%	1/6W	R835	1-249-433-11	CARBON	22K	5%	1/6W
R640	1-249-423-11	CARBON	3.3K	5%	1/6W	R836	1-247-809-00	CARBON	120	5%	1/6W
R701	1-249-425-11	CARBON	4.7K	5%	1/6W	R837	1-247-817-00	CARBON	270	5%	1/6W
R702	1-249-425-11	CARBON	4.7K	5%	1/6W	R838	1-247-813-00	CARBON	180	5%	1/6W
R703	1-249-423-11	CARBON	3.3K	5%	1/6W	R839	1-247-813-00	CARBON	180	5%	1/6W
R704	1-249-423-11	CARBON	3.3K	5%	1/6W	R840	1-247-813-00	CARBON	180	5%	1/6W
R705	1-247-839-00	CARBON	2.2K	5%	1/6W	R841	1-249-425-11	CARBON	4.7K	5%	1/6W
R706	1-247-839-00	CARBON	2.2K	5%	1/6W	R842	1-249-425-11	CARBON	4.7K	5%	1/6W
R709	1-247-839-00	CARBON	2.2K	5%	1/6W	R843	1-249-429-11	CARBON	10K	5%	1/6W
R710	1-247-839-00	CARBON	2.2K	5%	1/6W	R844	1-249-417-11		1K	5%	1/6W
R711	1-247-771-00	CARBON	3.3	5%	1/6W	R845	1-249-417-11		1K	5%	1/6W
R712	1-247-771-00	CARBON	3.3	5%	1/6W	R846	1-249-417-11	CARBON	1K	5%	1/6W
R713	1-249-440-11	CARBON	82K	5%	1/6W	R847	1-249-429-11	CARBON	10K	5%	1/6W
R714	1-249-429-11	CARBON	10K	5%	1/6W	R848	1-249-429-11	CARBON	10K	5%	1/6W
R715	1-249-441-11	CARBON	100K	5%	1/6W	R849	1-249-429-11	CARBON	10K	5%	1/6W
R716	1-247-892-00	CARBON	360K	5%	1/6W	R850	1-247-717-11	CARBON	2.2K	5%	1/4W
R717	1-249-437-11	CARBON	47K	5%	1/6W	R851	1-247-717-11	CARBON	2.2K	5%	1/4W
R718	1-249-425-11	CARBON	4.7K	5%	1/6W	R852	1-249-437-11	CARBON	47K	5%	1/6W
R719	1-249-435-11	CARBON	33K	5%	1/6W	R853	1-249-437-11		47K	5%	1/6W
R720	1-249-437-11	CARBON	47K	5%	1/6W	R854	1-247-875-00		68K	5%	1/6W
R801	1-247-217-00	CARBON	110	5%	1/2W	R855	1-247-875-00	CARBON	68K	5%	1/6W
R802	1-249-433-11	CARBON	22K	5%	1/6W	R856	1-247-875-00	CARBON	68K	5%	1/6W
R803	1-249-433-11	CARBON	22K	5%	1/6W	R857	1-247-875-00	CARBON	68K	5%	1/6W
R804	1-249-433-11	CARBON	22K	5%	1/6W	R858	1-247-875-00	CARBON	68K	5%	1/6W
R805	1-249-433-11	CARBON	22K	5%	1/6W	R859	1-247-875-00	CARBON	68K	5%	1/6W
R806	1-249-433-11	CARBON	22K	5%	1/6W	R860	1-247-875-00	CARBON	68K	5%	1/6W
R807	1-249-433-11	CARBON	22K	5%	1/6W	R861	1-247-875-00	CARBON	68K	5%	1/6W
R808	1-249-433-11	CARBON	22K	5%	1/6W	R862	1-249-435-11	CARBON	33K	5%	1/6W
R809	1-249-433-11	CARBON	22K	5%	1/6W	R863	1-247-845-00	CARBON	3.9K	5%	1/6W

#### ELECTRICAL PARTS

Ref.No.	Part No.	Description	on	
R864 R901 R902	1-249-433-11 1-247-721-11 1-247-721-11	CARBON CARBON CARBON	22K 59 4.7K 59 4.7K 59	1/4W
R903 R904 R905	1-247-839-00 1-247-721-11 1-247-721-11	CARBON CARBON CARBON	2.2K 5% 4.7K 5% 4.7K 5%	1/4W
R906 R907 R908	1-247-839-00 1-247-713-11 1-247-717-11	CARBON CARBON CARBON	2.2K 59 1K 59 2.2K 59	1/4W
R909 R910 R911	1-247-717-11 1-247-839-00 1-247-725-11	CARBON CARBON CARBON	2.2K 59 2.2K 59 10K 59	
	1-247-132-00 1-247-713-11 1-217-422-00			6 1/4W 6 1/2W F
***************************************	.1-217-422-00			
RV101 RV102 RV103		RES, ADJ,	METAL GLAZE METAL GLAZE CARBON 5K	
RV104 RV105 RV106	1-224-251-XX 1-224-250-XX 1-224-250-XX	RES, ADJ,	METAL GLAZE METAL GLAZE METAL GLAZE	2.2K
RV107 RV108 RV201	1-224-250-XX 1-224-250-XX 1-224-255-XX	RES, ADJ,	METAL GLAZE METAL GLAZE METAL GLAZE	2.2K
RV202 RV203 RV204		RES. VAR.	METAL GLAZE CARBON 5K METAL GLAZE	
RV 205 RV 206 RV 207	1-224-250-XX 1-224-250-XX 1-224-250-XX	RES, ADJ,	METAL GLAZE METAL GLAZE METAL GLAZE	2.2K
RV208 RV301 RV302	1-224-250-XX 1-237-026-11 1-228-127-00	RES, VAR,	METAL GLAZE CARBON 10K/1 CARBON 20K	
RV303 RV304 RV305		RES, ADJ,	CARBON 5K METAL GLAZE METAL GLAZE	
RV601 RV602 RV603	1-226-239-00 1-226-239-00 1-226-232-00	RES, ADJ,	CARBON 100K CARBON 100K CARBON 500	
RV604 RV605 RV701 RV702	1-226-232-00 1-224-252-XX 1-226-239-00 1-226-239-00	RES, ADJ, RES, ADJ,	CARBON 500 METAL GLAZE CARBON 100K CARBON 100K	10K
RY301 RY302 RY303		RELAY RELAY, LAT RELAY, LAT		

#### ELECTRICAL PARTS

Ref.No.	Part No.	Description
\$301	1-570-444-11	SWITCH, PUSH (4 KEY)
\$302	1-552-964-00	(TAPE SELECTOR/MPX FILTER) SWITCH, ROTARY (MODE)
\$601	1-554-338-00 1-553-325-00 1-553-206-00	
S852	1-552-539-00 1-552-539-00 1-552-539-00	SWITCH, KEY BOARD (STOP)
	1-552-539-00 1-552-539-00 1-552-539-00	
S857	1-552-539-00	SWITCH, KEY BOARD (REC MUTE) SWITCH, PUSH (AC POWER)(I KEY)
S1001	1-552-268-00	SWITCH, SLIDE.
\$1002	1-552-268-00	SWITCH, SLIDE
SW01 SW02 SW03	1-552-539-00 1-552-539-00 1-552-539-00	SWITCH, KEY BOARD (RESET) SWITCH, KEY BOARD (MEMORY) SWITCH, KEY BOARD (DOLBY B)
SW05	1-552-539-00 1-552-539-00 1-552-539-00 1-552-539-00	SWITCH, KEY BOARD (OFF)
TH201	1-800-200-00 1-800-200-00 1-800-200-00 1-800-200-00	THERMISTOR S-3K
	*1-560-062-00 *1-560-061-00	PIN, CONNECTOR 4P PIN, CONNECTOR 3P
X801	1-567-082-00 1-527-802-00 1-527-532-00	VIBRATOR, CRYSTAL OSCILLATOR, CERAMIC OSCILLATOR, CERAMIC

#### ACCESSORY & PACKING MATERIAL

Part No.	Description
1-551-315-00 3-311-640-01	CORD, CONNECTION INDIVIDUAL CARTON
3-577-672-00	CUSHION, FRONT
3-577-673-00	CUSHION, REAR
3-701-630-00	BAG, POLYETHYLENE
3-760-806-11	MANUAL, INSTRUCTION
3-793-481-13	INSTRUCTION
4-858-078-00	SHEET, PROTECTION

The components identified by shading and mark Aare critical for safety. Replace only with part number specified.